

PERSPECTIVES AND USAGE OF TECHNOLOGY OF ARABIC LANGUAGE TEACHERS  
IN THE UNITED ARAB EMIRATES

By

Khadija Alhumaid

B.A., University of Mohammad Bin Saud 2004

M.A., University of Sharja 2007

Submitted to the Department of Curriculum and Teaching of the University of Kansas in partial  
fulfillment of the requirements for the degree of Doctor of Philosophy

Dissertation Committee

---

Dr. Manuela Gonzalez-Bueno, Chairperson

---

Dr. Ronald Aust

---

Dr. Reva Friedman

---

Dr. Marc Mahlios

---

Dr. Bruce Frey

Date Defended: 3/31/2014

## Dedication

This work is dedicated to my parents who supported me throughout this whole journey, my children; Noura, Sara, Hajar, Ebrahim, and Omar who handled the difficulties of moving to a different continent with me, to my lovely brother Bashar who took good care of my children during the time I was abroad, to Mohammed who started this journey with me, to Abdullah who motivated me every day of this journey, and last but not least, to my supportive country the United Arab Emirates.

## Abstract

This study examined the perspectives and usage of technology by Arabic language teachers' in various schools all across The United Arab Emirates. Barriers to integrating technology were closely examined. Dimensions investigated included: perspectives towards computer-related activities, perspectives towards computer-related activities, perspectives towards computer competence, perspectives towards technology and general perspectives.

Arabic language teachers answered questions on electronic surveys regarding their classroom practices and personal opinions and thoughts about computers and technology.

The population of teachers was divided into the following categories:

1. Age
2. Years of experience
3. Gender
4. Levels of education

For the purposes of this study, more experienced is defined by general teaching experience in excess of ten years, and less experienced is defined as general teaching experience of ten years and fewer.

An analysis of the data showed that teachers at different levels of education and age tend to hold very different perspectives about technology integration and that the gender of teachers had no bearing on their perspectives toward technology. Teachers

from all levels of education expressed a positive perspective toward technology in some respects, including the benefits that technology can offer Arabic language instruction and student learning.

Teachers across all dimensions who expressed negative perspectives towards technology integration discussed, both explicitly and implicitly, the barriers that they perceived as preventing them from having a more positive perspective. These barriers were shown to originate from within the individual teacher, as well as within their environment in the school and classroom setting. For example, many of the barriers uncovered dealt with personal issues like self-esteem related to teaching and the classroom, feelings of inadequacy surrounding teaching, etc.

In testing the hypotheses of the study, hypothesis one showed that overall, teachers had positive perspectives towards technology usage. Hypothesis two revealed a P-value of less than 0.001 which means that there are differences between the perspectives and usage of technology of male and female Arabic language teachers in the UAE, with females having more positive perspectives. The third hypothesis examined the different perspectives and usage of technology between more and less experienced Arabic language teachers in the UAE. The testing of this hypothesis reported that there are differences between the perspectives of this group of Arabic language teachers, with less experienced teachers having more positive perspectives. The fourth hypothesis regarding younger and older Arabic language teachers reported that there are indeed differences in the perspectives of these two groups towards technology, with younger teachers having a more positive perspective. Lastly, the fifth hypothesis, which dealt with

teachers who have different levels of education, found that are no differences between the perspectives of Arabic language teachers with different levels of experience.

There is a need for more research and resources put into the area of technology usage in Arabic language instruction across The United Arab Emirates, more support for the schools and teachers endeavoring to make technology usage in Arabic language instruction a success, more pre-and in-service training for future and current teachers, and more research into which strategies will work to combat the barriers identified in this study.

## Table of Contents

Dedication .....	2
Abstract .....	3
List of Tables .....	8
List of Graphs .....	10
Chapter 1 .....	12
INTRODUCTION .....	12
Definition of Terms .....	17
<b>Arabic:</b> .....	17
Statement of Problem.....	18
Purpose of Study.....	18
Significance of Study .....	19
Research Questions.....	20
Research Hypotheses .....	21
Limitations of the Study .....	21
Chapter 2 .....	22
LITERATURE REVIEW .....	22
Theoretical Framework for the Study.....	22
Promotion of Technology in the Arab World .....	23
Barriers to Technology Integration .....	24
The Impact of Internal Factors on Technology Integration.....	27
The Impact of External Factors on Technology Integration.....	30
In-Service Training.....	30
Restructuring of the learning environment .....	32
Assessment System.....	33
Classroom Management .....	34
Support .....	35
Technical Support.....	36
The teacher thought process model.....	37
Benefits of Technology use in Arabic Language Teaching.....	38
Summary .....	41
METHODS .....	43
Introduction .....	43
Research Questions.....	43
Research Hypotheses .....	44
Description of the Study .....	45
Participants .....	45

Data Collection Approval .....	49
Data Collection .....	49
Scoring System .....	51
Validity .....	51
Reliability .....	55
Data Analysis.....	63
<b>Chapter 4 .....</b>	<b>65</b>
<b>RESULTS .....</b>	<b>65</b>
Preface .....	<b>65</b>
Research Questions.....	66
Testing Hypotheses of the Study .....	97
Responses.....	<b>100</b>
<b>CONCLUSIONS &amp; RECOMMENDATIONS .....</b>	<b>111</b>
Meaning of Research Findings .....	<b>112</b>
Recommendations for Stakeholders.....	<b>122</b>
Recommendations for Future Research.....	<b>124</b>
Summary.....	<b>125</b>
Appendix (A): Human Subjects Committee Approval.....	<b>138</b>
Appendix (B): Subject Consent Form.....	<b>139</b>
Appendix (C): LoTi Demographic Survey .....	<b>140</b>
Appendix (C1): LoTi Questionnaire for Teachers .....	<b>141</b>
Appendix (C2): LoTi Questionnaire for Building Administrators .....	<b>148</b>
Appendix (D): Teacher Technology Use and Attitude Survey (USEIT) .....	<b>155</b>
Appendix (E): Teacher Attitude Survey.....	<b>159</b>
Appendix (F): Arabic Language Teacher Perspective Survey .....	Error! Bookmark not defined.
Appendix (G): Full Version of the LoTi Survey.....	<b>172</b>
Appendix (H): Full Version of the Use, Support and Effect of Instructional Technology Survey .....	<b>188</b>
Appendix (I): Full Version of the Teacher Attitude Survey .....	<b>198</b>

## List of Tables

Table 1: Personal Characteristics of the Subjects .....	46
Table 2: The Chronbach's Alpha Score of the Questionnaire Measured the Perspectives of Arabic Language Teachers .....	54
Table 3: Chronbach Alpha for Dimension Two .....	54
Table 4: Chronbach Alpha for Dimension Three .....	56
Table 5: Chronbach Alpha for Dimension Four .....	57
Table 6: Chronbach Alpha for Dimension Five .....	58
Table 7: Chronbach Alpha for Dimension Six .....	59
Table 8: Chronbach Alpha for Constructive .....	60
Table 9: Arabic Language Teacher's Perspectives towards Technology .....	65
Table 10: Arabic Language Teacher's Perspectives towards Student Usage of Computers....	67
Table 11: Arabic Language Teacher's Perspectives towards Technology-Related Activities Performed by Students in the Classroom .....	69
Table 12: Arabic Language Teacher's Perspectives towards Using Computer-Related Activities..	71
Table 13: Arabic Language Teacher's Perspectives towards Computer Competence .....	73
Table 14 & 15: Arabic Language Teacher's Perspectives towards Technology .....	75
Table 16: Independent Samples T-Test for the Differences between Males and Females Arabic Language Teachers Regarding Their Perspectives towards Using Technology in Arabic Language Instruction .....	79
Table 17: Scheffe and LSD Post-Hoc Comparisons For Differences between Arabic Language Teacher' Perspectives towards Using Technology in Arabic Language Instruction Based on the Experience .....	81
Table 18: Scheffe and LSD Post-Hoc Comparisons for Differences between Arabic Language Teacher' Perspectives towards Using Technology in Arabic Language Instruction Based On the Experience .....	82



Table 19: An ANOVA for the Differences between Arabic Language Teachers' Perspectives towards Using Technology in Arabic Language Instruction Was Performed Based on Age... 90

Table 20: Scheffe's Post-Hoc Comparisons for Differences between Arabic Language Teachers' Perspectives towards Using Technology in Arabic Language Instruction Based on Age ..... 91

Table 21: ANOVA for the Differences between Arabic Language Teachers' Perspectives towards Using Technology in Arabic Language Instruction Based on the Education ..... 94

## List of Graphs

Graph 1: Depicts Frequency of Arabic Teacher's by Gender .....	47
Graph 2: Depicts Frequency of Arabic Teacher's by Experience .....	48
Graph 3: Depicts Frequency of Arabic Teacher's by Age .....	49
Graph 4: Depicts Frequency of Arabic Teacher's by Education Level .....	50
Graph 5: Arabic Language Teacher's Perspectives towards Technology .....	66
Graph 6: Arabic Language Teacher's Perspectives towards Using Computer-Related Activities	70
Graph 7: Arabic Language Teacher's Perspectives towards Technology-Related Activities Performed by Students in the Classroom .....	72
Graph 8: Arabic Language Teacher's Perspectives towards Using Computer-Related Activities...	74
Graph 9: Arabic Language Teacher's Perspectives towards Computer Competence .....	76
Graph 10 & 11: Arabic Language Teacher's Perspectives towards Usage of Technology.....	78
Graph 12: Independent Samples T-Test for the Differences between Males and Females Arabic Language Teachers Regarding Their Perspectives towards Using Technology in Arabic Language Instruction .....	80
Graph 13 & 14: Differences in Arabic Language Teacher's Perspectives towards Technology based on Experience .....	83
Graph 15: Differences in Arabic Language Teacher's Perspectives towards Technology-Related Activities Performed by the Student's in the Classroom based on Experience .....	85
Graph 16: Differences in Arabic Language Teacher's Perspectives towards Computer-Related Activities Based on Experience .....	86
Graph 17: Differences in Arabic Language Teacher's Perspectives towards Computer Competency Based on Experience .....	87

Graph 18: Differences in Arabic Language Teacher's Perspectives towards Using Technology	
Based on Experience .....	88
Graph 19: Differences in Arabic Language Teacher's General Perspectives towards Technology	
Based on Experience .....	89

## Chapter 1

### INTRODUCTION

In nearly every modern-day educational setting, there is some degree of integration between teacher instruction, curriculum and technology. Studies, such as the ones conducted by Snoeyink and Ertmer (2001) and Marshall (2001), have been very helpful in showing the positive benefits that technology can have on student learning and are overwhelming in number. Aside from being beneficial to student learning, and the classroom experience, technology enables students to access a wide variety of resources they would otherwise not be able to access. Despite all technology has to offer students, teachers and classrooms, some educators are still very reluctant to integrate technology into their teaching and classrooms. Moreover, there are variety of different perspectives towards technology usage in the classroom and what it can mean for education as a whole.

Of particular interest to this research are The United Arab Emirates and its population of teachers. In recent years, concerns about the “employability and skills” of students in the United Arab Emirates (UAE) has been growing (Farah & Ridge, 2009). Recently, the country has begun serious re-thinking and reformation of the nation’s curriculum and ways for them to enhance the competitive advantage of their students in the global market. One way that has gained a lot of popularity in the UAE is the use of technology to help enhance learning *and* to increase technology topics that are taught in the classroom (Farah & Ridge, 2009).

There are a variety of initiatives currently underway within the UAE that are testing the limits of technology and education integration, as well as exploring the perspectives and biases that teachers may have towards using technology in their teaching (Farah & Ridge, 2009).

Rapid change is being witnessed all throughout UAE Higher Education Federal Institutes such as the one initiated by Abu Dhabi Education Council and the Ministry of Education of the UAE. They have begun embracing mobile technology, such as iPads and other mobile devices, which is creating a new “paradigm in education” (Joshi, 2012). These changes help comprise the mobile learning initiative, an initiative that aims to incorporate mobile, hand-held and other technologies into classroom teaching and learning. This initiative is helping to create cooperation and collaboration between pedagogy, technology and content, and is drastically changing teaching and learning environments (Joshi, 2012). This learning initiative has already demonstrated positive results in two types of learning environments becoming increasingly popular throughout the UAE; challenge-based learning and flipped classrooms. Challenge-based learning is “an engaging multidisciplinary approach to teaching and learning that encourages learners to leverage the technology they use in their daily lives to solve real-world problems” (“Challenge Based Learning”, par. 1). This type of learning is collaborative and very hands-on, encouraging students to work with their peers, fellow teachers, ask questions and problem-solve (par.1). The second learning environment where the mobile learning initiative has been successful is in flipped classrooms. In this type of learning environment, the classroom “inverts traditional teaching methods, delivering instruction online outside of class”, and moves the homework aspect *into* the classroom (“Flipped Classroom”, par. 2). This enables educational technology and learning through activity to influence the learning environment in ways not possible by traditional instruction models (par. 4).

The United Arab Emirates (UAE) is a newcomer to the arena of foreign language education, Hamdan (2013) explains; however foreign language education is a young and growing field in the UAE, albeit a very important one. One of the government’s main goals is to

prepare its students to reach high proficiency levels in English *and* Arabic so they are equipped with the necessary language skills to function in the global marketplace. Hamdan (2013) reports that the UAE's education spending totals more than one-fifth of the total national budget and that a large portion of this budget will be spent on emphasizing language instruction and technology in the coming years. Sheik Nahayan bin Mubarak al-Nahayan, the UAEs former Education Minister, explained in an interview that the UAE is focused on building a "knowledge-based economy." He indicated that the country is investing in people and sources that will drive the economy and society forward as global trends shift (Hamdan, 2013). This strategy necessarily includes technological advancements in its scope, which can be represented by the unprecedented decision the Ministry made to replace textbooks with iPads across universities.

Although The United Arab Emirates are a relatively new group of states, they place a very high importance on the English and Arabic languages in their curricula because they see these two languages as the gateway into the global market [English] and a way to stay connected to their culture and tradition [Arabic] (Farah and Ridge, 2009). Farah and Ridge (2009) explain that while English is definitely seen as essential for education across the UAE, Arabic serves the unique purpose of grounding the younger generations in their culture and unity as a people; and that this purpose has been gaining momentum in recent years, pushing it to the forefront of curricula all across the UAE. The Education Minister of the UAE explained in an interview with the *New York Times* that while English remains the main language of instruction across the UAE, Arabic is still offered to students as a first and second language, and the advantage of such offerings means the country is able to graduate students who are fluent in both languages (Hamdan, 2013). He goes on to further say that the country plans to leverage and enhance this approach and that bilingualism offers students greater opportunities of success and more choices

opened up to them in their future (Hamdan, 2013). At the point where Arabic language education and the need to examine usage of technology in classroom instruction, it is essential to examine Arabic teachers' perspectives towards this idea to better understand the barriers that might make this endeavor more difficult.

Al-Khazraji (2009) explains that close to 90% of the UAE's population are foreigners. The citizens of the UAE have diverse backgrounds, as many of its residents come from various parts of the Middle East, Asia, and Europe (Al-Khazraji, 2009). The diversity of the UAE has attracted multinational corporations such as Microsoft, Exxon-Mobile and Boeing, concomitantly causing a boom in tourism, technology and other industries (Al-Khazraji, 2009). With all the diversity and growth of markets in the UAE, schools have responded by increasing the amount of resources and time they are spending on technology in the classrooms and teaching the Arabic language.

Teacher's perspectives and sentiments have a direct effect on how students learn and what experiences they have (Joshi, 2012). Moreover, a positive perspective toward a new strategy that the teacher will take ownership of implementing and driving technology usage will help to ensure its success. On the other hand, a negative perspective is likely to have the opposite effect. In light of these different perspectives, challenges have been and will continue to be highlighted throughout this journey, such as infrastructure considerations and digital safety as Anna Batchelder and Natasha Ridge (2013) point out. However, there are positive results of initiatives already enacted. Batchelder and Ridge (2013) found increased engagement on the side of students and teachers in many classrooms where technology strategies were being used. Whereas previously in the UAE many teachers felt isolated and lacked resources, they are now able to connect with a growing community of educators who are experiencing the same things as

they are. Furthermore, with the inclusion of technology into the classroom learning, class time has now extended beyond the walls of the physical room, and intense and thoughtful discussions are taking place about classroom material between teachers and students at various points throughout the day and week. Batchelder and Ridge (2013) also mentioned the need for an “increased body of Arabic-language educational research and case studies” (par. 5). More specifically, they explain that Western schools are not an appropriate comparison group for schools in the UAE, and that as educators continue to adopt technology and share their knowledge, the UAE will depend less on other nations for educators. In order to move the UAE forward as a collection of states and as a global contender striving to improve its education from within, it is necessary to understand Arabic teachers perspectives and usage of technology in their classrooms and to solicit their suggestions regarding what can be done to improve technology integration into the classroom, especially as it relates to Arabic language instruction.

Combining technology with Arabic language teaching is important for several reasons. When schools use technology effectively it can help develop skills like critical thinking; giving students access to real-life learning that help them learn more effectively and efficiently. It also enables students to make meaningful connections by looking and searching for answers and information. Technology may also incentivize students and pique their interest in the study of language by showing how it can be used and making them more involved in the learning process (Mills, 1999).



## Definition of Terms

### Arabic:

“A Semitic language consisting of numerous dialects that is the principal language of Arabia, Jordan, Syria, Iraq, Lebanon, Egypt, and parts of northern Africa” (*Arabic*, 2012).

### Perspective:

“The capacity to view things in their true relations or relative importance” (*Perspective*, 2014).

### Technology:

“The branch of knowledge that deals with the creation and use of technical means and their interrelation with life, society, and the environment, drawing upon such subjects as industrial arts, engineering, applied science, and pure science” (*Technology*, 2012).

### Technology for Learning:

"The learning and improving of performance by creating, using and managing appropriate technological processes and resources." (Richey, 2008).

## Statement of Problem

The United Arab Emirates is undergoing a change with its educational system that has been inspired by the need to integrate technology into classroom learning. As the importance of teaching Arabic in the UAE grows, so does the need to integrate technology specifically with Arabic language teaching (Farah & Ridge, 2009). The UAE cannot expect for this integration to be successful without the support and effective implementation by its teachers (Farah & Ridge, 2009). Even in the face of advanced teacher training, abundant resources, support from administration, etc., Arabic language teachers must have positive perspectives about technology usage. In fact, many Arabic language teachers are still uncomfortable employing technology in their teaching. Mills (1999) explains that the role of a teacher in such situations is crucial since the success or failure of decision making usually depends on teachers. In fact, it has been found that teacher beliefs and perspective have more influence on their practices than their pedagogical knowledge (Niederhauser & Perkmen, 2009). Therefore, the theoretical framework of this study was mainly established on outlining barriers to technology integration, restructuring the learning environment for students and teachers and uncovering the perspectives of teachers towards using technology in their Arabic language teaching.

## Purpose of Study

The purpose of this study is to explore the perspectives and usage of technology of Arabic language teachers in The United Arab, specifically in Arabic language instruction. Teacher's perspectives will be assessed through the use of researcher-constructed surveys.

## Significance of Study

Many educators think of the term information technology (IT) as the application of computer equipment and devices (Roblyer, 1997 & Zakaria, 2001). Reynolds' study (as cited in Hendren, 2000) offers an alternative definition for technology: "Technology in the classrooms was defined as anything used with intention of instruction and learning; from computer, calculators, interactive video, telecommunications, satellite conferencing, design technology, and instructional television to music synthesis, interactive laser discs, and other media" (82).

Davis and Naumann (1997) and Al-Oteawi (2002) describe information technology (IT) as a term that is applied in relation to computer hardware, computer software, input and output devices, visual display devices, communication networks, and communication hardware and software. Al-Oteawi (2002) says it is imperative to understand that "information technology includes both computer and communication technology." The relationships that have been built between digital technology and the earlier communication and broadcasting systems have had a big impact for both teaching and content within schools and for learners across the globe.

According to Lucas (1999), information technology includes different components: computers, database, and communications networks. Information technology is transforming education (Lucas, 1999). Boysen (1994) underlines the importance and potential power of technology in learning when he says that, "technology is removing many barriers to learning. Students are no longer limited to printed materials located in local or school libraries" (112). The use of technology in classrooms can enhance the learning of students where it was once lacking.

Taking into consideration the dynamic nature of language learning and how interactive it is, technology can provide many resources to help students learn Arabic.

The significance of this study helps provide a gauge of how “ready” Arabic language teachers are to begin using technology in their teaching, or how they currently view its inclusion into their classroom instruction. Furthermore, looking at what initiatives are currently underway in the UAE make this study even more significant. For example, The United Arab Emirates' inaugural Curriculum Conference and Curriculum Institute, which works to highlight the integration of technology, mobile learning and curriculum design in the modern classroom, officially opened on Sunday, November 25, 2012 at the Higher Colleges of Technology Dubai Men's College campus (“UAE Educators”, par. 1). This institute works to align nation and international standards so that learning outcomes, objectives and goals can be streamlined. This conference will help establish the UAE as a hub for expertise throughout the country and promote learning through the use of educational technology. This highlights the fact that the move towards using technology in classrooms all across the UAE has begun, and it is important to ensure that the Arabic language teachers are onboard with this move.

### Research Questions

1. What are Arabic language teacher’s perspectives towards technology and teaching?
2. Are there differences between the perspectives of male and female Arabic language teachers towards using technology in Arabic language instruction?
3. Are there differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction?

4. Is there a difference between the perspectives of younger or older Arabic language teachers towards using technology in Arabic language instruction?
5. Is there a difference between the perspectives of Arabic language teachers with different levels of education towards using technology in Arabic language instruction?

#### Research Hypotheses

1. Arabic language teachers have a positive perspective towards using technology.
2. There are differences between the perspectives of male and female Arabic language teachers towards using technology in Arabic language instruction.
3. There are differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction.
4. There is difference between the perspectives of younger or older Arabic language teachers towards using technology in Arabic language instruction.
5. There is difference between the perspectives of Arabic language teachers with different levels of education towards using technology in Arabic language instruction.

#### Limitations of the Study

There are two limitations that have the possibility to affect the outcomes of this study:

1. The participants of the study may have miscalculated how much they actually use technology in their teaching.
2. Participants not completing the survey due to lack of interest, fear of exposure, or because they did not want to answer all the questions.

## Chapter 2

### LITERATURE REVIEW

#### Theoretical Framework for the Study

Although there is an abundance of support given to teachers and great investments are made in providing schools with new technology, there is still a gap between the expected level of technology integration by teachers and the actual integration of technology into the classroom curricula (Marcinkiewicz, 1993). The theoretical framework of this study tries to examine this gap and aims to provide insight into why technology may be underutilized in Arabic language learning across the UAE. This review includes an examination of the promotion of technology in Education in the Arab world, models of instruction, the restructuring of the learning environment, and the teacher thought process model. Examining the promotion of technology in the Arab world provides the study with a foundation for why technology is so important to the UAE and why it is being pushed for use in language instruction. Theories surrounding barriers to technology integration help to explain why some teachers might express negative perspectives towards technology usage in teaching. Examining how the learning environment has been restructured highlights the role that technology has played in new-age education, and what teacher perspectives exist about the new environment in which technology plays such an important role. Lastly, how teachers make decisions about *how* to teach is of utmost importance, as it reveals teacher perspectives towards many aspects of using technology in their instruction.

## Promotion of Technology in the Arab World

Nineteen fifty-three marked the year when formal education was first introduced into the region now called the UAE by means of a Kuwaiti educational endeavor which resulted in a school (Farah & Ridge, 2009). After that school was established, funding from the UAE along with Qatar, Bahrain, Egypt, and Saudi Arabia, allowed countless other schools to open across the UAE (Farah & Ridge, 2009). These schools had very standard texts and curricula that were often provided by the country that funded the school (Farah & Ridge, 2009). After the creation of the UAE, in 1972, the Ministry of Education began to unify the mix of different schools (Farah & Ridge, 2009). Although there was a central education authority, the Ministry of Education, the secondary schools' curriculum was still borrowed from other countries and all the texts utilized by students were imported (Farah & Ridge, 2009). Not until 1979 did the Ministry of Education develop its National Curriculum project meant to create a single, unified Emirati curriculum (Farah & Ridge, 2009). Curriculum in the UAE has always referred to the books and texts that were used in instruction, rather than actual skills or standards that students should be taught (Farah & Ridge, 2009). In that way, teachers were very limited in what they could teach and students in what they could learn, as they were both bound by what the text offered.

Technology access and education is seen as important to the progress of developing nations, so much so that it was placed as one of the top three most important global issues, falling only behind poverty and domestic violence (Samak, 2006). In 2003, there was a program called Information Communication Technologies in the Arab Region (ICTDAR) created with the purpose of helping different Arab countries reduce poverty and improve public and private administration by focusing on information technologies (Samak, 2006). A report put out by The

United Nation Conference on Trade and Development (UNCTAD) in 2004 found that many Middle Eastern countries were far behind the West and other nations in education and technological advancement, and advised the Arab countries to “see the development of ICT as tied to the development of education, trade, health, and other sectors to generate wider benefits”. The report went on to say that technology is important in the "knowledge economy of the global market” (Samak, 2006, pg. 25). The different initiatives put forth by these various organizations were meant to help the Arab countries leapfrog into the global marketplace and to educate younger generations in a way that they would enter the marketplace technologically savvy and competitive. The UAE recognized the importance of these initiatives and sought to align their national curricula with them, outlining technology and language as two areas that they wanted all the states within the UAE to focus on developing. In this way, language learning and technology became two very important academic focal points across the UAE that demanded resources and research to further develop.

### Barriers to Technology Integration

Examination of teachers’ perspectives towards technology usage cannot be examined without also examining different roadblocks that teacher’s might run into when trying to integrate technology into their teaching. According to Balanskat, Blamire and Kefalla (2006) there are different types of barriers to technology integration, including: teacher-level barriers, school-level barriers and system-level barriers. At each level, there are aspects that will impact how teachers think and feel about technology in their classrooms. On the teacher-level there exist barriers such as the inability to operate technology because of lack of skills or training, low motivation to use technology on the part of the teacher and low confidence in using the



technology in the classroom. There are also school-level barriers. These include underdeveloped technology infrastructure, low-quality hardware and software and limited access to resources. Balanskat et al. (2006) describe system-level barriers as lack of support from school systems, especially as it relates to standardized tests. Understanding that teachers are going to come up against barriers at each of these levels can help educators better prepare for how they reduce the possible negative impacts of these barriers. Moreover, it may help explain why some teachers might have negative perspectives towards technology usage in their teaching.

According to Merriam-Webster Dictionary (2014), a barrier can be defined as a law, rule, problem, etc., that makes something difficult or impossible. In consideration of this definition, barriers to technology integration can include far more than just teacher-level, school-level and system-barriers. More specifically, research in this field outlines barriers to technology integration into classrooms into first and second-order barriers (Brickner, 1995). Ertmer (1999) explains that the first-order barriers are those barriers that are external to teachers and are usually described in terms of types of resources such as, time, cost, training, support, etc., that are missing in the educational environment. Second-order barriers are internal to teachers. Second-order barriers are comprised of teachers' perceptions of technology. Combine these barriers with other concerns such as fear of technology itself, uncertainty about the value that technology has in education, dislike of technology and a disparity between the needs of the educational system and teacher's with regards to technology, and they become much more difficult to overcome (Lee, 2001).

The tendency exists for first-order barriers to hide second-order barriers in such a way that many issues surrounding internal barriers are attributed to problems stemming from external barriers (Snoeyink & Etmer, 2001). As an example, Snoeyink & Etmer (2001) found that if an

institution has a lack of resources for teachers to learn about technology implementation in their classrooms, it could lead to teachers having poor or limited skills. This will then lead to negative experiences with technology in their teaching, which in turn brings about a lack of comfort using technology. This finally may prevent teachers from actually using technology in their classrooms. Although in some situations first-order barriers may be eliminated, second-order barriers will still exist (Ertmer et al., 1999). Research has shown that as teachers gain more experience using technology and become more comfortable doing so, the second-order variables tend to diminish (Ertmer et al., 1999). Due to this, it is important for educational leadership to look at first-order barriers and identify appropriate action steps to mitigate those barriers. Following addressing the first-order barriers, second-order barriers must also be efficiently dealt with so that educational leadership can truly understand the reasons that teachers have difficulty with implementing technology in their classrooms.

There is a clear gap between the government's expectations of teachers using technology in their classroom, and how much they actually do use technology. According to Guhlin (1996), the gap is caused by the fact that technology is underused in schools. Other sources concede to this fact, stating that underuse is connected to intrinsic and extrinsic elements which are a main cause of ineffective use of technology once it gets into the hands of educators. To actually change how teachers use technology in their teaching, Keengwe et al. (2008) explained that behavior and perspectives of individual teachers must change. The following have been identified by teachers as the most common barriers: lack of functioning equipment and useful software, outdated equipment and software, insufficient released time for training, lack of funding, inadequate technical and administrative support, negative perspectives of teachers towards technology, lack of teacher confidence, unwillingness to change, little or no training,

lack of a clear vision that embodied the successful integration of technology into classroom instruction (Keengwe et al. 2008).

### The Impact of Internal Factors on Technology Integration

Internal factors are less noticeable than external factors. They also are more a part of an individual's personality. Teachers can have predetermined thoughts that do not fit well with the technological change process without even being aware of these thoughts. In this way, teachers may inadvertently oppose the change process. Fabry and Higgs (1997) provide that an innate and automatic dislike for change, especially as it relates to technology integration, is the biggest and most basic barrier. Many times, resistance to change is overlooked as a barrier to integration of instructional technologies in the classroom (Dias, 1999). As teachers are required to integrate technology into their classrooms, they are also being asked to "change the way they teach", which may include changing their role in the classroom, as well as the physical environment that they are teaching in (p.12). Technology integration consistently draws teachers away from a teacher-centered approach towards a learner-centered classroom (Corcoran, 1995). These types of changes may be dramatic and difficult for teachers accustomed to teacher-centered pedagogies. They may take a lot of time and patience with continued effort to be successful.

Traditional teachers and instructional approaches identify an activity that needs to be completed by the student, and believes that the student should complete this activity independently (Corcoran, 1995). These teachers like to maintain control of what students learn and how they learn it, and are quite content with their classroom management style (Corcoran, 1995). This style consists primarily of lecture-based instruction and the teachers believe that students will not move forward or progress unless they are regularly tested (Corcoran, 1995). It

is these teachers, the ones following the traditional style of instruction who should transition to technology-based activities, which invite students to use critical thinking skills, decision-making, discovery learning, self-learning and cooperative learning. Recognizing the full capabilities of technology used in learning cannot occur if teachers and educational leaders cannot change their vision of learning (Corcoran, 1995). More specifically, educational leaders need to be able to rethink how technology will change their instruction styles, how meaningful and applicable learning can take place thereafter (Harris and Sullivan, 2000), how classroom resources can be managed and allocated successfully, and finally, how objectives based on technology usage can be measured (Carey, 1993).

Aside from teachers being resistant to changes in their teaching style and curriculum, there is also uncertainty about how technology can help achieve certain curricular objectives (Schoepp, 2004). Many teachers are unaware of how much technology can contribute to student learning. Technology is versatile enough that it can be used inside and outside of the classroom to enhance student learning. Students can use technology at home to master skills that they may have difficulty learning, or not enough time to learn in the classroom. Technology can also be used to expand and apply what was taught in the classroom. Teachers may never embrace technology in their instruction if the merits and value of technology in education are not stressed to them during its implementation.

Marcinkiewicz (1993) comments that, from the beginning, technology in education has been a source of fear for educators. Particularly, fear of losing status occurs when teachers are afraid that computers and technology may replace them, or negatively impact their profession (Marcinkiewicz, 1993). For example, in the United Arab Emirates, teachers are required to use technology in certain aspects of their teaching. However, many teachers will find ways around

using the said technology during their lessons because they fear that they might lose importance when compared to the technology. Additionally, if students fail to grasp the content being taught, teachers believe that they are still the responsible party for students understanding material in the eyes of parents and administrators. Lee & VanPatten (1996) call this the Atlas Complex.

There is also concern expressed from educators that technology may have a negative impact on student learning and achievement (Chen, 2008). Chen (2008) explains that they may be afraid that students will not learn essential skills that are necessary for them to be proficient in. One example is spell-check, which fixes spelling errors automatically while typing. Teachers have a concern that students will not learn the rules of the language as proficiently as they should. There are some teachers who strongly oppose technology for reasons such as this. They express their dislike or disagreement with technology by banning it in their classrooms and instilling harsh punishments for those that use technology while they are giving the lesson, or by even banning the use of technology in their classrooms all together.

Another important fear that teachers have is that of being less knowledgeable about technology than their students (Hodas, 1993). This is one of the most internal and intrinsic barriers that prevent many teachers from learning new skills and knowledge needed for using technology effectively. Unknown and unfamiliar situations may embarrass teachers because of how rapidly technology changes. If teachers are unable to effectively use technology, it may appear that they are ill-prepared and thus they may lose respect from their students and fellow teachers. Some teachers who are older and have been teaching for a long time may not know technology very well and have poor knowledge in the area of how to use and navigate technology as a whole. These teachers may express the fear of not wanting to be far behind, but because of the era from which they come from, move through the change process very slowly

(Lee, 2011). They are very much concerned with finding out the value that technology has in education, as well as the impact that technology will have on their role as teacher and their profession.

Language is a new and emerging area for technological integration, and administrators should take care when considering the “psychological risks of pressures” (Bennet, 1995, p.22) that teachers experience, which might bother them when they are learning how to use and implement new technologies. Teachers are generally seen as individuals who have all the answers, especially when it comes to technology in their area or subject of teaching. It is natural that teachers may feel apprehension and nervousness about engaging in new learning environments. For these reasons, it is important to encourage and support teachers, from the level of fellow teachers all the way up to the principal, staff developers and administrators.

### The Impact of External Factors on Technology Integration

The following sections detail various external barriers that may hinder successful integration of technology in classroom instruction, as identified by previous studies.

#### In-Service Training

Kearsley and Lynch (1992) explain that at nearly every level of education, knowing how to use technology and having skills to use technology are very common barriers. Studies have shown in many Middle Eastern technology-rich university environments that teachers do not fully know how to use technology properly in their classroom instruction, and that the lack of knowledge and uncertainty is caused by insufficient in-service training (Kearsley & Lynch, 1992). Other studies have shown that educators are not automatically willing to adopt new

technologies in the classroom during the earlier phases of implementation for many reasons including; being afraid of something new and not having enough knowledge to use the technology sufficiently or appropriately. In other educational environments, Kazu (2011) explains that lack of in-service training in technology is a key factor in unsuccessful implementations. Teachers would not fear using technology as much if greater efforts were made to train them on how to use it. Additionally, in light of these concerns that teachers have, as well as the dynamic nature of technology, it is very important to provide consistent and long-term in-service training by means of workshops and individual help to teachers who are striving to adopt new technologies in classroom instruction (Guhlin, 1996).

The U.S. Congress (1995) outlined some key points in the discussion of in-service training for teachers aiming to implement new technologies into their classroom instruction. It explained that while there are many efforts being made to enhance teachers' ability to integrate technology into their teaching, most of these efforts are focused on the mechanics of technology, i.e. how to operate the equipment or software, and not on how to successfully integrate the technology into instruction and organizational goals (1995). There is a misconception that just because teachers have access to the technology and complete an in-service program, that they should and will be able to seamlessly integrate technology into their curricula. However, the reality is that although many teachers may know how to *use* the technology, they still may not be able to meaningfully integrate it into their lessons and use it effectively. Consequently, teachers will often use the technology in their teaching without ever using it to create meaning to the lessons (Ash, 2001).

The question remains, how can teachers successfully implement and incorporate technology into their teaching? Corcoran (1995) offers that it depends on the quality of the

training that the teachers receive on the technology they are aiming to implement. A recent study discovered that classroom teachers feel like the training they received on technology integration did not address pedagogical and organizational considerations (Alhazmi et al., 2010).

Researchers suggest creating a “dual focus” when training on technology implementation so that pedagogical topics are covered within the training, making it more applicable and complete (Ertmer et al, 1999, p.70). This type of in-service would identify specific points within the curriculum where technology could be used, and an analysis of the right type of technology to use. Guhlin (1996) suggests that other areas such as, critical-thinking, discovery learning, etc., should be examined to see if technology could also aid in their delivery.

#### Restructuring of the learning environment

At one point, teachers were seen as the sole deliverers of knowledge. All knowledge was passed down from teacher to student, and students were the receptacles of this knowledge. Note-taking was the most popular means of capturing knowledge and written means of communication were most popular (Petras, 2010). These types of environments, according to Petras (2010) can be thought of as teacher-driven learning environments. This type of learning environment is exactly how the education system of The United Arab Emirates emerged. Teachers were solely reliant upon the textbooks and students were totally dependent upon the teacher.

In today’s age, however, the learning environment of students has changed. Consequently, how teachers teach has also changed. Whereas students used to access information primarily through books and lectures, technology has now given them access to an unthinkable amount of information and resources due to the wide range of capabilities that technology has (Petras, 2010). As McEneaney (2000) puts it, the internet has become “the”



technology go-to in many schools. At any moment and in any place, the internet provides a truly dynamic learning environment. In this way, the learning environment is now open for both students *and* teachers. The teacher is the primary guide for students, helping them learn and teaching them how to access information and then use that information to achieve their goals in our current society. Gregoire and Laferruere (2001) found in their research on different teacher models that the constructivist approach, which is a learner-centered model, helps learners become critical thinkers, highly engaged in their work and encourages them to take ownership of their own learning. The new environment of learning has in many ways moved far away from a teacher-centered model to a learner-centered model, and it is this model that will support the use of technology in classrooms.

Successful technology integration requires training to meet teacher's current and changing needs. Lei and Morrow (2009) explain that it is crucial to include teachers in some parts of curricular and instructional planning of this training, as they are the ones who are going to be actually integrating the technology into their instruction. This will help the integration process be meaningful to them (2009). Much research on the topic of professional development recommends that planner take the teachers who will be attending in-service into account, paying special attention to their concerns when designing the training programs. The teachers will be accountable for demonstrating much needed knowledge and insight into the training sessions (Orlich, 1983). The concerns include, but are not limited to, teachers' needs regarding the meaningful use of technology in their classrooms, teaching methods and assessment procedures.

Assessment System

How to assess student learning and outcomes from technology-based activities through existing assessments is a great concern for educators (Scheffler & Logan, 1999). Due to the fact that many teachers do not know how to successfully integrate technology into their teaching, it follows that they are likely unfamiliar with, and have not been instructed on how to use the assessment methods used in a learner-centered environment that uses technology resources. However, there are several means of measuring student outcomes in an environment that uses technology. Some of the ways to measure these outcomes include using rubrics, e-portfolios, and performance assessments, which will involve group work and critical-thinking using technology to solve a problem. Strategies that can measure technology-driven activities should be implemented in the classrooms so teachers can familiarize themselves with how to use them and the best ways to use them. If there are technologies that will be used to aid teachers in tracking student progress, then they will also need adequate in-service training on how to use these tools. Time and analysis must also be spent on evaluating the tools' weaknesses, and to assess achievement of the objectives that are met by using technology that involve those higher-order skills such as, problem solving, discovery learning, etc. (Carey, 1993).

### Classroom Management

Even with the best in-service training, teachers will still be in their classrooms with the technology and their students. They, therefore, must know how to manage and use the technology that they are trying to implement. Managing technology within the classroom is not an easy task, especially for teachers who have not been prepared to deal with it. In addition to actually delivering the lesson material to students, teachers must also effectively manage students so that they all get a fair chance at using the technology, as well as help students who

get stuck with using the technology. Ertmer (1999) offers that the management of the classroom as a barrier can cause both intrinsic and extrinsic problems. First-order barriers may occur when there is not enough equipment for the whole student body, there are too many students in the classroom, or the teacher is lacking in classroom management skills (Alhazmi et al., 2010). On the other hand, second-order barriers may occur when teachers want to control the classroom beyond the technology, do not want to teach outside of the teacher-centered approach that they are accustomed to, or are more in favor of student independent learning (Scheffler and Logan, 1999). Luckily, there are numerous environments that exist today where teachers can meaningfully integrate technology into their teaching, including: computer labs, learning resource centers, single-computer-based classrooms where teachers and students can present, cooperative-computer-based classrooms where teachers have their own computers and students share a small group of computers and lastly, a classroom where the teacher and every student has their own computer (U.S. Congress, 1995). Educational planners should know these areas well, and aid teachers in effective management strategies for each environment, as well as help them to understand how to manage classroom resources effectively.

## Support

This study describes what Arabic language teachers' perspectives and usage of technology are based on a variety of elements, including gender, years of experience, education level, and age. As teachers fall into these various categories, they are experiencing different intrinsic and extrinsic barriers which need a particular type of support to be overcome (Dias, 1999). Due to the dynamic nature of technology, a variety of support types may be needed. Teachers arrive in training with a wide array of abilities and skills which also change rapidly. Ertmer and Hruskoc

(1999) identified the types of support that teachers trying to implement technology into their teaching may need to access, including: emotional, administrative, professional, instructional and technical. Ertmer and Hruskocy (1999) put great importance on using effective support types that will meet teachers' needs in the implementation journey.

## Technical Support

For educators across the board, technical support is of great importance for successful implementation of technology into the classroom. However, the Office of Technology Assessment (U.S. Congress, 1995) reported that on-site support for technology integration is very limited. Dias (1999) points out that, in general, there are different types of technical support that may be lacking including administrative and financial. In talking with and observing Arabic language teachers in the United Arab Emirates, many teachers expressed to me the feeling that technical-support does not want to be bothered with so many questions, and that they are not always available. This outlines the importance of having a permanent and fully staffed technical support for each school. This technical support should be responsible for training, teaching the teachers how to use the technology, addressing technical issues and troubleshooting, maintaining and fixing software and hardware and upgrading systems as appropriate (Dias, 1999). Even teachers who are very comfortable with using technology will not be able to devote much of their time to being support coordinators for themselves or other fellow teachers because they are busy with their classroom activities and other responsibilities (Dias, 1999). As Dias (1999) explains, education leaders must make informed choices about allocating the right type of technical support with enough availability to be useful to teachers.

## Administrative Support

Inan and Lowther (2010) found that school or district-wide administrative support has a key role in successful integration of technology into the classroom. When administrators are informed and at ease with technology, they are key players in taking a lead with supporting technology integration activities within their institutions (U.S. Congress, 1995). Once administrators become knowledgeable about what it takes for successful technology integration to occur, they can identify areas that may pose difficulties, as well as the support needed for teachers to be successful with the implementation as well.

## The teacher thought process model

Teaching is a very challenging job and many components go into teaching. To be an *effective* teacher is even more challenging and usually begins with very carefully thought out brainstorming, planning and decision making (Cravens, 2011). Teachers must decide such things as what to teach, but more importantly *how* to teach it. A model developed by Clark and Peterson (1986) describes the thought process of teachers and helps us to understand how they are connected in the overall goal of being an effective teacher.

There are essentially two major processes that occur in teacher thought. The first are the processes that happen while a teacher is deciding to teach material to students. This reveals the “internal approach”; the aspects that are unobservable (Cravens, 2011). On the other side there are the observable parts of teacher thinking. The importance of this model is that it highlights the parts of a teachers thought process that involves thinking about what they teach and how they will use technology to teach it. This model can help researchers understand at what point in the

teacher thought process they begin to feel uncomfortable about implementing technology into their teaching, and further, what strategies can be developed to help mitigate these concerns.

### Benefits of Technology use in Arabic Language Teaching

In general, teachers have come to the agreement that technology has become crucial to the teaching and learning process, and many of them have a desire to use technology to enable a higher-quality learning and teaching environment (Marshall, 2001). In the UAE, a trend has emerged that labels Arabic language teachers who use technology in their teaching as self-motivated and dedicated. This is because it is an investment of their personal time and energy into figuring out how to use the technology in their lessons in more than one way (Hamdan, 2013). Teachers across the board have also reached a consensus that technology is appropriate for a variety of topics of learning and are highly persuaded about the benefits of using technology in education (Snoeyink & Ertmer, 2001). This section identifies research that confirms that there is enthusiasm about using technology in teaching, as well as addresses some of the perspectives that Arabic language teachers specifically have about using technology in their teaching.

Effective integration of technology into language instruction nearly always takes more time than expected, as leaders must take into account not only all the aspects of the technology itself, but also of the language being taught and all the complexities that it entails (Farah and Ridge, 2009). Teachers rarely have time left to spend on other things since they use most of their time in the classroom with students, meeting with parents, attending meetings, grading assignments and examinations, etc. (Fabry and Higgs, 1997). In spite of this, however, what makes some teachers want to learn technology and integrate it into their teaching still? While

using technology in language instruction and classroom teaching in general, is considered quite a difficult task, some teachers seem to be acutely aware of the benefits and enhancements that technology can offer their classroom instruction.

Alhazmi et al., (2010) explains that the most important potential incentive for Arabic language teachers to implement technology into their teaching is that it greatly improves the learning process for students. Technologies such as computers and Internet become crucial in the educational environment since they can provide growth to student learning across a variety of learning areas such as: reading and writing skills, critical thinking associated with problem solving, collaborative learning (Huang, 2006), concepts of power and culture (Sernak & Wolfe, 1998), learning through completing authentic tasks (Means, 1993) and individualized learning for students (U.S. Congress, 1995). Technology can also contribute to the increased engagement of students, as well as academic performance, which are two of the most motivating things for teachers of any subject (Brown, 2004). In congruence with Brown (2004), although there are some deep-rooted negative perspectives of teachers in the UAE towards using technology to teach the Arabic language, many teachers cannot deny their students increased attention and interest in the Arabic language lessons when technology is being used.

Alhazmi (2010) explains that all subjects can be taught more effectively to the extent that the technology being used makes the subject more interesting to students. Teachers can develop authentic activities, which Brown, Collins and Duguid (1989) define as “the ordinary practices of the culture” (Collins & Duguid, 1989, para. 21) that meet five standards: (1) a higher level of thinking beyond normal classroom activities, (2) a deeper and more complex type of knowledge, (3) real-world connections, (4) conversation that has substance, and (5) social support for student achievement. These activities are ones that students can expect to deal with in future

employment, at home or with family and friends. For language in particular, culture and real-world activities are a must (Hamdan, 2013). To master a new language, not only does the student have to learn the mechanics of the language, but they must also grasp the culture and social context in which the language developed and currently exists (Hamdan, 2013). There are a variety of activities that teachers can facilitate through the use of technology that will enhance student's experiences with the language they are learning. Technology provides a way to connect students', the Arabic language and the real-world in a way that is unrivaled by other modes of instruction (Al-Khazraji, 2009). Technology also enables a student's personal life to be connected to contemporary public issues. Authentic activities like this used in the instruction of language enables students to make connections between lessons, apply what they are learning in their day-to-day activities (Hadley & Sheingold, 1993), and to advance their skills due to working out real-life problems (Means, 1993).

The amount of time and effort saved in the teaching process is an almost unanimously agreed upon benefit of the use of technology in teaching. Research shows that technology allows teachers to gain access to content from diverse cultural backgrounds, without spending time, energy and money on travel. Technology has the ability to re-create world environments for exploration and discovery that helps students develop higher-order thinking (Bransford et al., 1986). In this way, students can interact with the Arabic language and other subjects to experiment, explore, and gather information from a variety of resources and to solve problems.

Although some Arabic language teachers might express negative perspectives towards technology integration into classroom learning, they still might see the benefits that technology can offer their instruction in the way of expanding their subject matter and applying it in a way that will meet their goals and objectives more efficiently (Al-Khazraji, 2009 & Brown, 2004).



Unfortunately, in the UAE there are many isolated pockets where teachers are subject to scarcity of interactions with fellow co-workers and professionals, preventing them from becoming strong in the subject matter they teach and not rely on others (Al-Khazraji, 2009). This may heavily contribute to some teacher's negative perspectives about technology. Although teachers are the owners of particular subjects and the information entailed within them, it is impossible to know everything. With technology, teachers have access to a world of knowledge and to other professionals in the field that enable them to strengthen their knowledge in their subject area.

Technology integration into classroom instruction enables Arabic language teachers, and all educators to acquire important skills for their profession. They will need these skills to be computer-literate and to transfer knowledge to their students. Ash (2011) asserted:

Being literate has always meant the capacity to use a culture's most powerful tools to create and communicate meanings. If you are not teaching with technology, you are not preparing the kids for the future; you are not preparing them for the present moment (p.24).

### Summary

This literature review revealed some of the key barriers that exist to successfully implementing technology into teaching. These barriers may be a fundamental cause of the perspectives and usage of technology of Arabic language teachers in the United Arab Emirates. There are several major causes of the perspectives of Arabic language teachers which must be addressed. The current study examined the perspectives and usage of technology of Arabic language teachers in the UAE by breaking down the different barriers to technology usage, as well as briefly examining the teacher thought process model.

Arabic language teachers who are undertaking the task of using technology in their classroom instruction may find the process exceedingly difficult because of the barriers that exist. These barriers can be divided into two categories: internal and external barriers. Resources such as time, cost, and support and training comprise the external barriers, and were identified as either non-existent or lacking in the UAE educational setting. Internal barriers are expressed in two different ways as outlined by this literature review: (1) in terms of how teachers perceive technology and being opposed to the student-centered model of teaching, which includes teaching methods, classroom management styles and assessment procedures; and (2) in terms of the teachers personal resistance. The review also showed that sometimes external barriers can tend to hide internal barriers, and therefore, the focus was placed on identifying major external barriers so that effective strategies to meet these barriers can be sought.

In the United Arab Emirates, teachers who use technology are thought to be self-motivated because they devote a lot of time and energy to learning how to use the technology, and how it can best be used in their classrooms. There is also a consensus that technology is appropriate for the instruction of various subject matters and the benefits that technology offers education (Farah and Ridge, 2009). Thus, in analyzing and determining the perspectives and usage of technology of Arabic language teachers in the UAE, the researcher confirmed factors that will help encourage enthusiasm and interest on the part of teachers towards the usage of technology in their teaching.

### Chapter 3

## METHODS

### Introduction

The purpose of this study was to explore Arabic language teacher's perspectives and usage of technology in their teaching. The study focused on various high schools in the United Arab Emirates in order to investigate Arabic teachers' perspectives towards using technology in teaching, and differences in perspectives amongst a variety of categories; such as males and females, more and less experienced Arabic language teachers, younger and older Arabic language teachers and Arabic language teachers with different levels of education.

The United Arab Emirates is comprised of seven states, each with approximately 20 schools. In each state, six schools were selected. Of the six schools from each state, three were schools for girls only and three were schools for boys only. The schools were selected under the guidance of the UAE Ministry of Education so that they had a population of Arabic language teachers and an Arabic language curriculum in place. Teachers in all the different categories and across various states in the UAE were asked to partake in an online survey regarding their perspectives, opinions and usage of technology in their teaching. Analyses of their responses were conducted. General perspectives towards technology were also explored.

This chapter discusses the research questions and hypotheses, as well as the research design. The data collection methods, scoring system, validity and reliability of the instrument and an analysis of the data are also discussed.

### Research Questions

1. What are Arabic language teachers' perspectives towards technology and teaching?

2. Are there differences between the perspectives of male and female Arabic language teachers towards using technology in Arabic language instruction?
3. Are there differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction?
4. Are there differences between the perspectives of younger and older Arabic language teachers towards using technology in Arabic language instruction?
5. Are there differences between the perspectives of teachers that have different levels of education?

#### Research Hypotheses

1. Arabic language teachers have a positive perspective towards using technology
2. There are differences between the perspectives of male and female Arabic teachers towards using technology in Arabic language instruction.
3. There are differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction.
4. There are differences between the perspectives of younger and older Arabic language teachers towards using technology in Arabic language instruction.
5. There are differences between the perspectives of teachers with different levels of education towards using technology in Arabic language instruction.

## Description of the Study

This descriptive study examined the current perspectives of Arabic language teachers in the high schools of the United Arab Emirates and identified teachers' perceptions of barriers and obstacles that make it difficult to use technology in their teaching process. The research instrument developed for this study was developed with the intention of gathering a diverse sample of perspectives from all across the UAE.

## Participants

One hundred and forty nine Arabic language teachers out of two hundred completed the questionnaires which were distributed via e-mail. A pattern emerged among the sample population between citizens of the UAE and non-citizens of the UAE. Teachers who taught in more remote areas and teachers who were non-citizens had a much lower response rate than teachers who were citizens of the UAE. Table 1 presents the personal and occupational characteristics of the 149 participants.

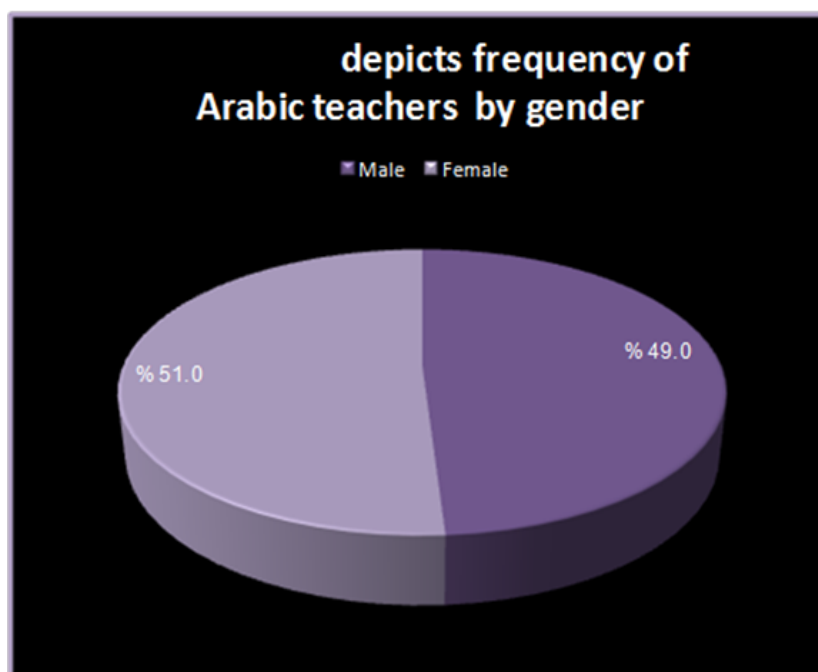
Table 1 Personal characteristics of the subjects (N= 149)

Personal Characteristics	No.	Percentage %
Gender		
Male	73	49.0
Female	76	51.0
How many years have you been an Arabic language teacher?		
1-2 years	7	4.7
3-5 years	8	5.4
6-10 years	35	23.5
11-15 years	28	18.8
> 15 years	59	39.6
Age group (23,15.4% are missing)		
20-30	30	20.1

31-40	62	41.6
41-50	19	12.8
51-60	15	10.1
61 and above	-	-
Mean age $\pm$ SD	37.41 $\pm$ 9.07	
Education		
Bachelor's degree	139	93.3
Bachelor's plus some graduate	5	3.4
Master's degree	1	0.7
High School Diploma	2	1.3

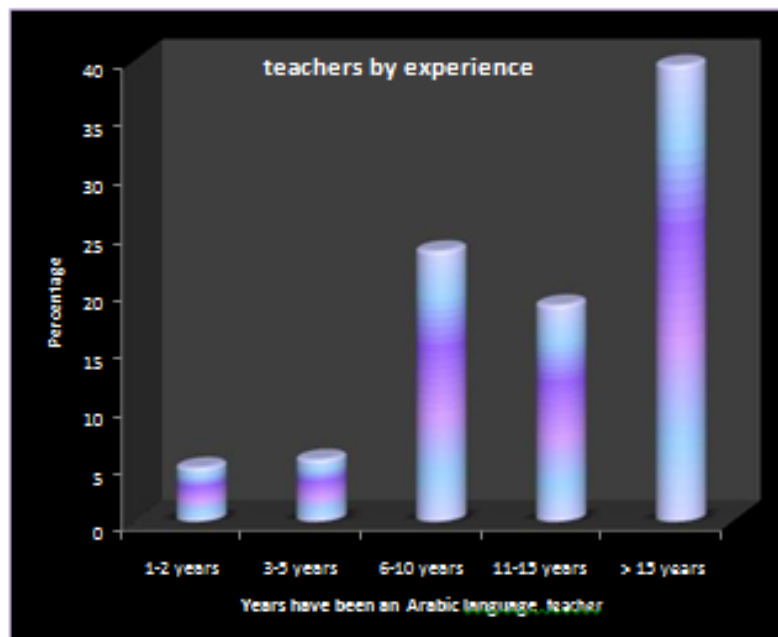
The majority respondents were females (51%), while male teachers represent 49.0% of the sample (see graph 1).

Graph 1 Frequency of Arabic Teachers by Gender



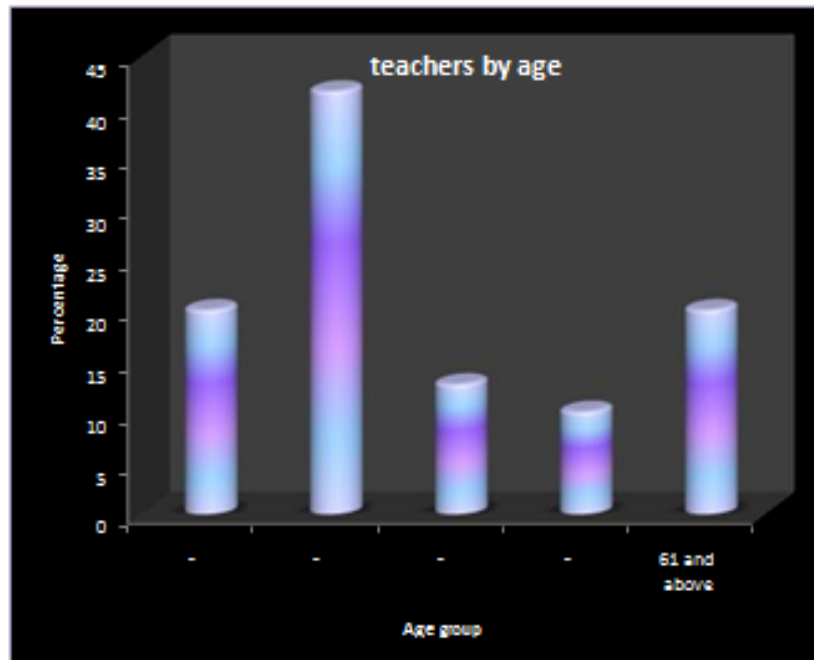
On average, the survey participants had been an Arabic language teacher for 5 years (mean= 1.8 years). A total of thirty-nine point six percent had been an Arabic language teacher for more than 15 years, 23.5% for 6 to 10 years, and 18.8% for 11 to 15 years; while 5.4% of the participants had been an Arabic language teacher for 3 to 5 years and 4.7% for 1 to 2 years (see graph 2).

Graph 2 Frequency of Arabic Language Teacher by Experience



The mean age of these participants was 37.41 years old and 74.5% of them were less than 60 years old. It is worth mentioning that 30.2% of the Arabic language teachers involved in this study were aged 51 to 61 years and above (see graph 3).

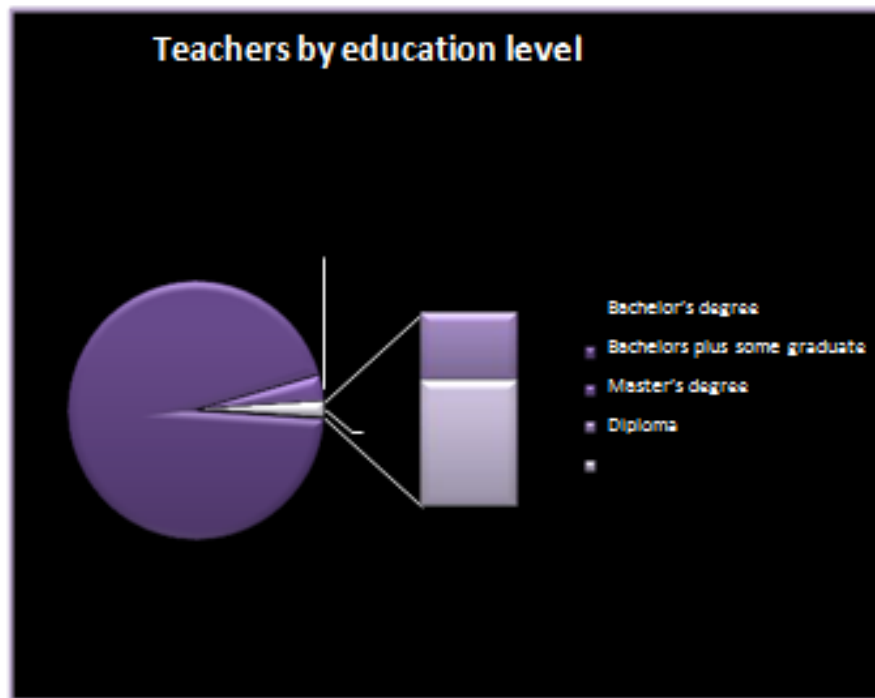
Graph 3 Frequency of Arabic Language Teacher by Age



Most participants 93.3% (n=139) held a Bachelor's degree, 3.4% had a Bachelor's degree plus some graduate education and 1.3% held a high school diploma. Only one participant held a Master's degree which constituted 0.7% of the population (see graph 4)



Graph 4 Frequency of Arabic Teacher by Education Level



#### Data Collection Approval

All participants were asked to electronically sign their consent (Appendix B) to participating in the study, prior to completing the surveys (Appendix C – Appendix E). The consent form clearly explained to the participants that their responses would not be shared but kept anonymous and that they were participating in the study as exercise of their own free will.

#### Data Collection

A survey exploring Arabic language teacher's perspectives towards the usage of technology in their teaching was the means by which orientation was measured. All the teachers across the various schools with publicly available e-mails were sent the invitation to participate in the study. The e-mails were sent out over the course of several days. The e-mails directed the

teachers who wished to participate in the study to go to an online link and complete the survey (Appendix C – Appendix E). The survey was available for one month's time to enable those with other responsibilities and engagements to respond at the most convenient time for them. The data were then collected at some point after the middle-mark of the school year. Had the data been collected too soon, then new teachers would not have had the opportunity to develop a strong opinion about the usage of technology in their teaching, in which case the data might not have been valid or reliable.

The survey was designed in such a way that it enticed the participant to complete it. Standard design principles were used regarding font, color, etc. No questions *required* an answer. As Stieger, Reips and Voracek (2007) explain, subjects who are not given a choice to skip questions and not provide an answer may drop out of the survey and not complete it. The survey requested a variety of information from the participants to complete including: demographics, teacher technology use and teacher orientation toward technology use in teaching. The survey contained some questions that required the selection of only one answer, and others had the option of selecting multiple answers.

Once the survey was complete, participants submitted it to an online database by clicking a button designated as 'submit survey'. At the conclusion of the survey, the information gathered by the database was transferred to Excel, where the information was then organized and sorted so that it could be analyzed statistically.

The method of using a web-based survey helped avoid some of the errors related to manual data entry. The participants were also able to easily access the survey and submit their responses quickly. De Beuckelaer and Lievens (2009) purported that there was no major difference between data gathered via web and data gathered via paper. For this reason, a web-

survey was chosen. The paper method also had higher costs and time associated with it. It would have also been much more difficult to reach our sample of participants using a paper survey.

### Scoring System

Polit and Hungler (2003) described a Likert scale as consisting of several declarative items that express a viewpoint on a topic in order to enhance variance among responses. Respondents are asked to indicate the degree to which they agree or disagree with the opinion expressed by the statement. The data are then scored individually. For each participant, the average of each statement is calculated, eliminating the items that were left blank. For example, if an individual did not enter a response for a statement, then it was not included in the average. The average was calculated based only on the items that were responded too, so that the results would not be skewed. The only items left unanswered were open-ended questions, and this was not a common occurrence so no patterns could be determined from unanswered items

### Validity

The construction of the surveys was reviewed and feedback was provided by a panel of experts in the Ministry of Education of the UAE to ensure that the survey was accurate in measuring the perspectives of Arabic language teachers towards the usage of technology in their teaching.

The questions that were included on the surveys were selected by the researcher and were reviewed by the Human Subjects Committee – Lawrence Campus at The University of Kansas, as well as the Ministry of Education of The United Arab Emirates. The questions were selected after carefully researching surveys already developed and used for this type of study. After

researching and analyzing multiple survey instruments, the researcher adopted and adapted questions for this study using only the following surveys: the Levels of Teaching Innovation Survey (LoTi), the Use, Support and Effect of Instructional Technology survey (USEIT), and the Technology Attitude Survey (TAS). Each survey instrument and how it was developed for this study is discussed below.

### The LoTi Survey

The LoTi survey (see appendices C – C2) is an online survey that was adopted for this study. This survey was used to collect and analyze data to assess technology usage in the classroom of Arabic language teachers in the UAE, which was put forth by its creator, Dr. Chris Moersch in 1994 (National Business Education Alliance, 2006). The LoTi survey was not used in its entirety. For the purposes of this study, the LoTi survey used by the researcher was broken down into three parts: the LoTi Demographic Survey, the LoTi Questionnaire for Teachers, and the LoTi Questionnaire for Building Administrators (see appendices C – C2). The LoTi Demographic Survey instrument adapted for this study excluded only one question from the original (see appendix G). That question asked for the gender of the teacher responding to the survey and was excluded because the gender had already been established (boys' schools had male respondents and girls' schools had female respondents). The LoTi Questionnaire for Teachers instrument used in this study excluded six items from the original LoTi Questionnaire for Teachers. They were: school name and district name, age range, years of experience, highest degree completed, if the student has computer access at school and the question at the end of the survey asking for any comments (see appendix G). The LoTi Questionnaire for Building Administrators was adopted in its entirety for this study (see appendices C2 & G).

## The USEIT Survey

The USEIT survey developed by Michael K. Russell was designed to examine teacher, school and district characteristics associated with teachers' technology-use in middle and high school grades. This instrument was used in a study conducted in 22 school districts in Massachusetts (Bebell et al, 2004). For the purposes of this study, the USEIT survey was used to measure Arabic language teacher's perspectives towards using technology in their classroom instruction. The USEIT survey developed by Michael K Russell contains forty-six items (see appendix H); however, this study only used the following eleven items: 2, 3, 4, 5, 9, 10, 11, 12, 13, 14 and 15 (see appendices D & H).

## The TAS Survey

The second survey that was used in this study was the Teacher Attitude Survey. This survey instrument was developed by McFarlene, Green and Hoffman (1997) (see appendix I). For the purposes of this study, the Teacher Attitude Survey was not used exclusively, but the researcher adapted the questions on this survey to measure how often Arabic language teacher's use technology in their classroom instruction and how comfortable they are using technology (see appendix E). Items 1-3 on the TAS used by the researcher (see appendix E) are general demographic questions asked to the respondent and did not come from the original TAS, but the researcher. Items 4-20 were adapted from three questions in the TAS developed by McFarlene, Green and Hoffman (1997): "I feel uncomfortable using most computer-related technology", "Once I start using computer-related technology, I find it hard to stop" and "I wish I could use technology more frequently". From these three questions, the researcher developed a list of questions that asked about specific technologies and how often Arabic language teachers use

them in their teaching. Items 20-27 of the TAS used in this study asked about the comfort level of Arabic language teachers using technology (see appendix E). These items were adapted from four questions on the original TAS: “Working with computer-related technology makes me nervous”, “Computer-related technology makes me feel stupid”, “I feel uncomfortable using most computer-related technology” and “I think using computer-related technology is difficult for me”. Items 28-33 on the TAS used in this study were not adapted from the TAS developed by McFarlene, Green and Hoffman (1997), but were developed by the researcher. Items 31-33 are the open-ended questions that were asked to the teachers.

All the survey questions used in this study were adapted using the LoTi, USEIT and TAS surveys, and reviewed by the Human Subjects Committee at the University of Kansas and approved by the Ministry of Education of the UAE. Furthermore, if a question on one of the three surveys used was not relevant to the UAE, the population for this study or the focus of this research; or, if the question was redundant it was not used. All of these surveys were tested for validity and reliability by testing a small sample of teachers before distribution of the survey to the larger sample of teachers.

The survey instruments were translated from English into Arabic for the sample of teachers used in this study. First, the survey instruments were adapted from the original surveys (LoTi, USEIT & TAS). Once the survey instruments were completed, the researcher translated them into Arabic. The original surveys (LoTi, USEIT & TAS) and the adopted/adapted instruments were then given to two additional Arabic language instructors who have more than fifteen years’ experience teaching the Arabic language and who have excellent command of the English language to compare and check the translations for accuracy. Once this was completed,

the final survey instruments and their originals were given to the Ministry of Education of the UAE for review and approval.

During the review and approval by the a panel at the Ministry of Education of The United Arab Emirates they provided feedback on 50 items that would serve as the final survey to administer to the sample of teachers for this study (see appendix F).

## Reliability

To ensure that the instruments had internal consistency, a Cronbach alpha was conducted. This is a common statistical measurement to help determine the reliability of any instrument. There are many threats to the internal reliability of an instrument, including testing, experimental mortality and selection bias (Neuman, 2006).

External reliability basically ensures that others should be able to replicate the findings of a study in other environments (Neuman, 2006). This study had the possibility of reactivity threatening its external reliability. Because the participants answered questions about their working conditions, it held the possibility that they would answer the survey how they *think* that they should answer it. The confidentiality and anonymity clauses in the consent form were, in part, an attempt to lessen this threat.

The scale content reliability was established by using Cronbach's alpha coefficient (Funk et al., 1991a). Burns and Grove (2005) stated reliable tools are consistent in what they measure. Cronbach's alpha is an index of the degree to which all of the different items in a scale are measuring the same attribute (Polit 1996). The higher the correlation coefficient, the more reliable the instrument is. It is usually calculated by the correlational procedures and it ranges between -1.00 to +1.00. According Polit and Hungler (2003) an instrument with reliability  $\geq 0.6$

is safe to use. Cronbach's alpha in Funk's study was between 0.65-0.80 (Funk 1991). The following tables; Tables 2 – 7 represent the Cronbach's alpha for each of the six dimensions of the study including: perspectives of Arabic language teachers on using technology, computer competence, student usage of technology, technology-related activities, computer-related activities and general perspectives of Arabic language teachers towards technology; as well as the Cronbach alpha for the total survey. These items were gathered by using the surveys that were developed for this study (LoTi, USEIT, and TAS). These surveys each tested a variety of dimensions that were based on their sample population, research design, hypotheses and purpose. All of the dimensions tested in this study have been adapted from the surveys used in this study.



Table 2: <i>Cronbach Alpha for Dimension One: Perspectives of Arabic Language Teachers on Using Technology</i>				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Computer s scare me	34.41	26.736	.348	.766
2. I like having computers in classrooms	35.64	26.509	.082	.825
3. I enjoy using computers	34.76	23.151	.639	.727
4. I dislike using computers in teaching	34.69	22.355	.724	.714
5. Computer s save time and effort	34.76	25.567	.293	.774
6. I don't think computers are necessary in the classroom	34.85	21.438	.652	.718
7. I would like to learn more about computers	34.91	24.192	.424	.756
8. I have no intention of using computers in the near future	34.63	23.790	.552	.739
9. Students must use computers in all subject areas	34.94	22.212	.623	.725
Cronbach's Alpha=0.773 N of Items: 9				

Table 3: <i>Cronbach Alpha for Dimension Two: Arabic Language Teachers Perspectives on Computer Competence</i>				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Work individually on school work without using computers	28.43	33.961	-.355-	.748
2. Perform research or find information without using a computer	28.67	33.429	-.334-	.731
3. Use a computer to play educational games	27.33	21.128	.683	.497
4. Learn keyboarding skills	27.13	22.206	.578	.528
5. Use a computer to play educational games or for fun	27.22	20.268	.738	.476
6. Present information in class using a computer	26.59	23.006	.569	.537
7. Use a spreadsheet to analyze data	27.09	25.054	.260	.611
8. Use e-mail to communicate with peers or others	26.80	22.143	.521	.539
9. Do a project or a paper using a computer outside of class time	26.35	24.149	.486	.560

Cronbach's Alpha= 0.626  
N of Items= 9

Table 4: <i>Cronbach Alpha for Dimension Three: Arabic Language Teachers Perspectives on Student Usage of Technology</i>				
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Type reports and term papers	21.07	24.596	.669	.777
2. Create multimedia projects	21.10	26.902	.682	.774
3. Use pictures or art work	20.54	29.258	.636	.786
4. Access stories or books	20.90	30.902	.514	.804
5. Use graphs or charts	21.53	29.673	.508	.804
6. Watch videos or movies	20.72	29.684	.506	.805
7. Access web pages, websites or other web-based publications	20.79	29.557	.452	.815
Cronbach's Alpha= 0.820 N of Items= 7				

Table 5:  
*Cronbach Alpha for Dimension Four: Arabic Language Teachers Perspectives on Technology Related Activities*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Use a computer while you are instructing your class	21.55	17.249	.267	.584
2. Prepare or maintain IEP's using a computer	23.72	14.404	.366	.550
3. Create a test, quiz or assignment using a computer	22.17	14.418	.331	.566
4. Use e-mail to communication with the school and district administration	22.61	15.055	.302	.576
5. Create and maintain web pages	23.52	12.898	.437	.519
6. Record student grades using a computer	21.29	18.100	.284	.586
7. Make handouts for students using a computer	21.24	17.936	.386	.573
Cronbach's Alpha= 0.604 N of Items= 7				

Table 6:  
*Cronbach Alpha for Dimension Five: Arabic Language Teachers Perspectives on Computer Related Activities*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. Use a printer	34.42	28.129	.496	.833
2. Use the internet to communicate	34.63	29.497	.331	.851
3. Use a computer to upkeep your grades	34.40	28.415	.636	.821
4. Use a Power Point to present information to your class	34.32	26.974	.714	.811
5. Create and organize educational material	34.70	26.082	.712	.809
6. Operate a processing program (Microsoft Word)	34.99	24.790	.610	.823
7. Operate a spreadsheet program	34.81	28.419	.518	.830
8. Use the internet to access a variety of information	34.31	29.563	.643	.825
9. Install new software on a computer	35.14	27.544	.512	.832
Cronbach's Alpha= 0.843 N of Items= 9				

Table 7:  
*Cronbach Alpha for Dimension Six: General Perspectives of Arabic Language Teachers Towards Technology*

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
1. I like using technology	32.55	31.044	.637	.826
2. Knowing how to use technology is a necessary skill for me	32.34	31.975	.482	.838
3. Technology makes me feel stupid	33.60	29.580	.392	.855
4. I don't expect to use technology much at work	32.93	29.083	.459	.845
5. Working with technology is boring	32.72	28.761	.611	.824
6. I think using technology will be difficult for me	32.71	28.826	.606	.825
7. It is important to know how to use technology to get a good teaching position	32.64	29.187	.581	.827
8. I wish I could use technology more often	32.61	28.607	.771	.810
9. I feel confident in my ability to learn about technology	32.62	29.340	.721	.816
Cronbach's Alpha= 0.846 N of Items= 9				

Table 8: <i>Cronbach Alpha for the Survey</i>		
<u>Construct</u>	<u>N of Items</u>	<u>Cronbach's Alpha</u>
General Perspectives	50	0.863

Tables 2-7 show the results of the Cronbach's alpha for the six dimensions related to perspectives and usage of technology by Arabic language teachers in the United Arab Emirates. In table 8 it shows that the questionnaire had a reliability coefficient of 0.863 (Cronbach's alpha) where its value is more than 0.70. This indicates that the survey instrument (questionnaire) can be a reliable tool to measure the dimension of general perspectives consistently.

#### Data Analysis

A quantitative method was used in this study to interpret findings and accomplish the objectives of the study. The Statistical Package for Social Science (SPSS) program was used to code and analyze the data per the research questions of this study. The researcher used a variety of statistical tests that depended on the research question.

After the data was gathered by the database and exported to Excel, the independent variables of age, gender, experience, and education were sent to the SPSS file. Descriptive statistics were used to organize and summarize this data. The frequency, percent and mean values were calculated for the independent variables of age and years of experience. These measurements were also calculated for the perspective statements of the survey.

To determine if there is a correlation between the use of technology in teaching and the Arabic language teachers' perspectives in relation to age, gender, experience level and education level, a Pearson Product Moment Co-efficient of correlation was conducted. Salkind (2009)

explains that a Pearson correlation is a number based index that is used to show how two variables are related. The relationship between two variables will be stronger the higher the coefficient is. For this reason, a Pearson correlation was appropriate for this study.

For the purpose of interpreting the results of this research question we used the following criterion:

Strongly disagree/never	given weight (1) ranged from 1 to < 1.75
Disagree/rarely	given weight (2) ranged from 1.75 to <2.50
Neutral/ sometimes	given weight (3) ranged from 2.50 to < 3.25
Agree /very often	given weight (4) ranged from 3.25 to 4.00
Strongly agree/always	given weight (5) ranged from 4.20 to 5.00

A one-way ANOVA test was used to compare the Arabic language teachers' perspectives toward technology to the independent variables. Because we are examining differences between groups, this test was appropriate to use. All statistical tests had a significance level of  $p = 0.05$ . The groups were assumed to have normal distributions due to the sample size, and a Levine statistic was calculated to confirm this. According to the central limit theorem, randomly chosen populations will tend to have normal distributions, and the normality will increase as the sample size increases (Salkind, 2009). Additionally, Salkind (2009) says that the sample size should be in excess of 30, and for this study it was. Because this sample size was so large, it helped to reduce the occurrence of Type II errors. All Statistical tests were run using the Statistical Package for Social Sciences (SPSS16). In the next chapter, these results will be discussed.



## Chapter 4

### RESULTS

#### Preface

This study was carried out to investigate Emirati Arabic language teacher's perspectives and usage of technology in United Arab. This chapter presents the results of the statistical analyses of this study. It further examines the relationship between teacher's perspectives and four independent variables including gender, experience, age, and education level. The data collected from Arabic teachers (n= 149) working in the forty-two high schools in this study were analyzed through descriptive statistics in IBM SPSS statistics 20.0. These results are presented in graphs, tables, and explanations with respect to each statistical analysis. The level of significance established for this study was alpha ( $\alpha$ ) = 0.05. Moreover, abbreviations used for *descriptive statistics* are Mean (M), Standard Deviation (SD) and Frequency (f). For *inferential statistics*, (t) is used for t-test and (F test) for ANOVA test, (df) for degrees of freedom and (P value) for probability. Additional symbols are: (AS) for Strongly Agree, (A) for Agree, (N) for Neutral, (DA) for Disagree, (SD) for Strongly Disagree, (AL) for Always, (VO) for Very Often, (S) for Sometimes, (R) for Rarely, (Ne) for Never, (%) for percentage and (\*) for the degree of significance. The research questions are listed along with the hypotheses of the study.

## Research Questions

In order to answer the fundamental question of the study, the following research questions must be answered:

1. What are Arabic language teacher's perspectives towards technology and teaching?
2. Are there differences between the perspectives of male and female Arabic language teachers towards using technology in Arabic language instruction?
3. Are there differences among the perspectives of more and less experienced teachers towards using technology in Arabic language instruction?
4. Are there differences between the perspectives of younger and older Arabic language teachers towards using technology in Arabic language instruction?
5. Are there differences between the perspectives of teachers that have different levels of education?

*Research Question One: What are Arabic language teachers' perspectives towards technology and teaching?*

To answer this question, respondents were asked to rate each of the 50 items included across the six dimensions used in this study: perspectives of Arabic language teachers on using technology, computer competence, computer-related activities, technology-related activities, student usage of technology and general perspectives of Arabic language teachers towards technology. Initially, a frequency table was generated for each item (question). Tables 9-14 show how these 50 items were ranked based on what degree respondents agreed with the statement.

Tables 9-14 also present the frequencies, percentages, means and standard deviations of the 50 items across the six dimensions.

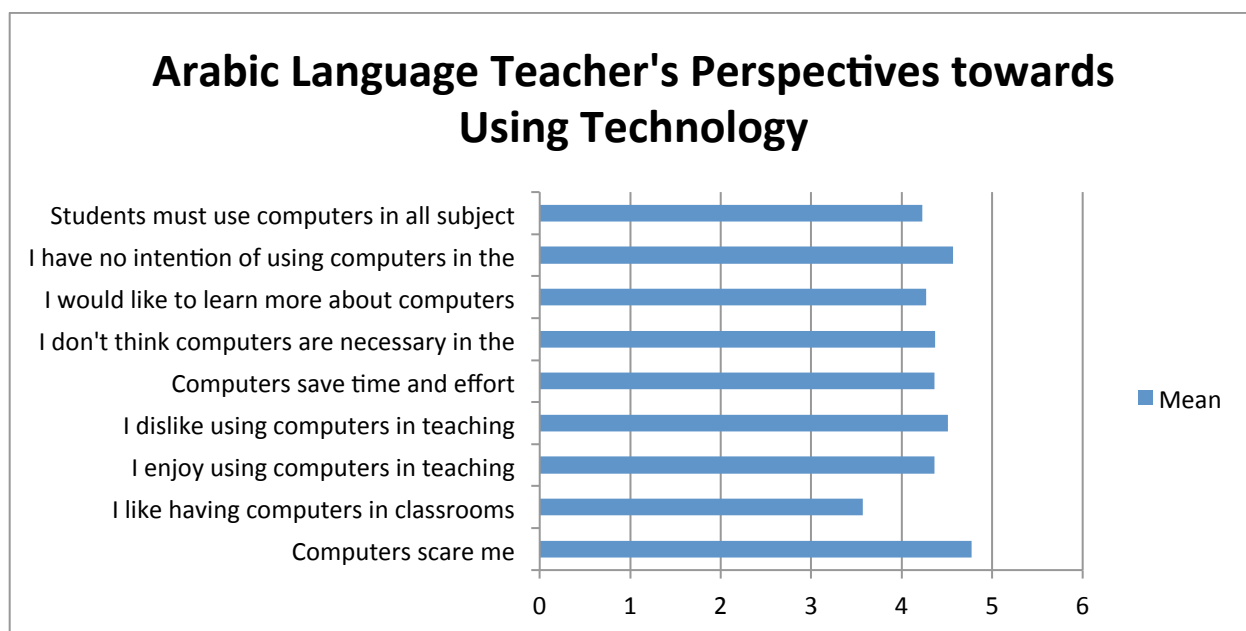
Table 9: <i>Perspectives of Arabic Language Teachers on Using Technology</i>			
	Mean	SD	Rank
1. Computers scare me	4.77	0.66	1
2. I like having computers in classrooms	3.57	1.35	9
3. I enjoy using computers	4.36	0.94	5
4. I dislike using computers in teaching	4.51	0.93	3
5. Computers save time and effort	4.36	1.06	6
6. I don't think computers are necessary in the classroom	4.37	1.09	4
7. I would like to learn more about computers	4.27	1.08	7
8. I have no intention of using computers in the near future	4.57	0.88	2
9. Students must use computers in all subject areas	4.23	1.02	8
Total mean	4.33	0.58	

Table 9 displays the results of Arabic language teacher's perspectives towards using technology in order of the statements they agreed with the most, to the ones they agreed with to a lesser degree, which shows that teachers strongly agreed with the statements: 1. *Computers scare*

me (M=4.77), 8. *I have no intention of using computers in the near future* (M=4.57), 4. *I dislike using computers in teaching* (M=4.51), and 6. *I don't think computers are necessary in the classroom* (M=4.37). It is important to mention that these statements were negative.

On the other hand, the participants strongly agreed with the following statements: *Computers save time and effort*, *I would like to learn more about computers* and *Students must use computers in all subject areas* in the order of agreement respectively, whereas they agreed less with the statements: *I like having computers in classrooms*, which comes last with average mean of (3.57) (see graph 5 for a visual display of the results).

Graph 5 Arabic Language Teacher's Perspectives towards Using Technology



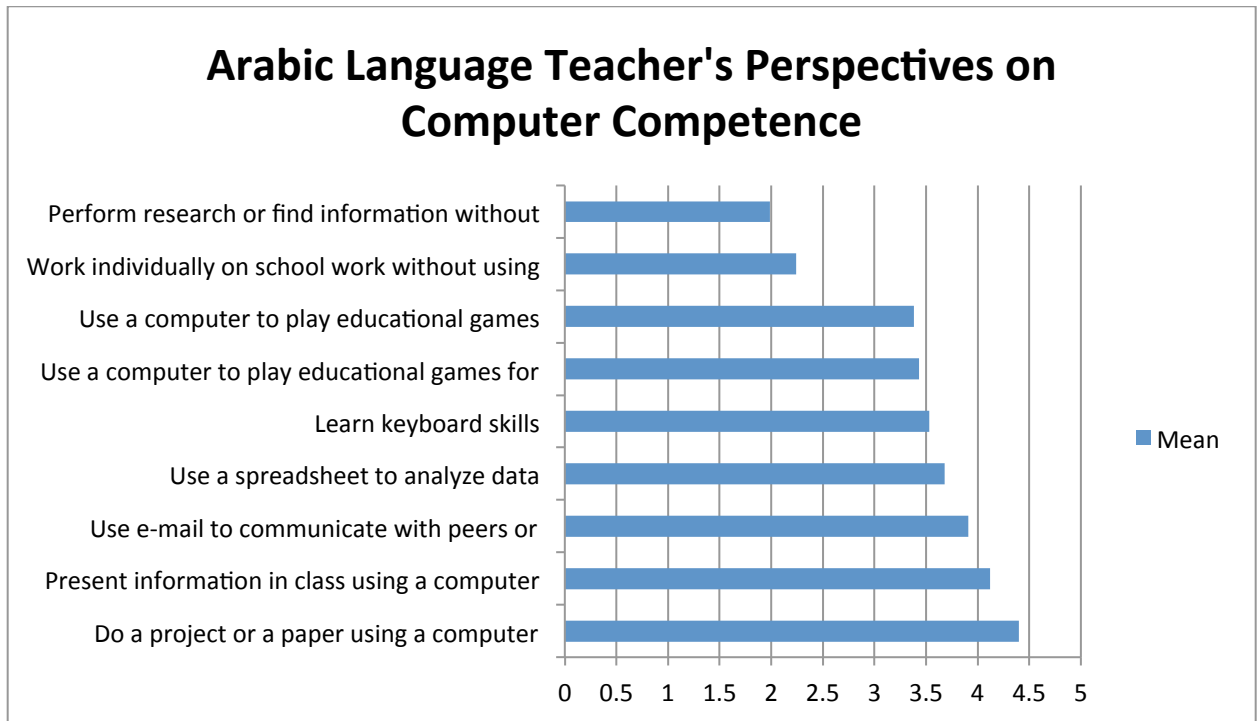
The descriptive data shows that the participants tend to have positive perspectives towards technology, but at the same time, they are afraid of technology despite the fact that they stated that they enjoy using computers and they are aware of the benefits of using computers in the education process. Additionally, they thought that computers must be used by the students in all subject areas in addition to their desire to learn more about computers.

Table 10 shows that the Arabic teachers believe that, in general, students use the computer very often and, overall, showed to have a neutral perspective towards computer competence.

Table 10: <i>Arabic Language Teacher's Perspectives on Computer Competence</i>			
	Mean	SD	Rank
Work individually on school work without using computers	2.24	1.27	8
Perform research or find information without using a computer	1.99	1.16	9
Use a computer to play educational games	3.38	1.24	7
Learn keyboarding skills	3.53	1.19	5
Use a computer to play educational games or for fun	3.43	1.34	6
Present information in class using a computer	4.12	1.09	2
Use a spreadsheet to analyze data	3.68	1.35	4
Use e-mail to communicate with peers or others	3.91	1.29	3
Do a project or a paper using a computer outside of class time	4.40	1.01	1
Total mean	3.14	0.59	

The overall average teachers' responses towards computer competence reached 3.41 out of 5; and by reference to the five point-Likert scale used in this study, the average value are equivalent to "Very often". The results revealed that most of the teachers' responses to the statements of this dimension confirmed the extent of computer competence by students in a lot of activities, which refers to their ability to receive education through modern technology. It is worth mentioning that teachers believe that students are implementing their projects using computers outside of the classroom, and this statement was ranked first with an average of 4.40 out of 5. The students also, often times, provide the information in the classroom using computers. In addition to that, they use e-mail to communicate with colleagues or with others. It was also found that students are conducting statistical processes by using computer-generated spreadsheets from programs like Microsoft Excel and learning how to utilize printing skills. Furthermore, the teachers believe that the students are competent in using computers to play educational games or for personal fun. On the other hand, teachers express the opinion that students rarely work alone to perform their school work or conduct research without the aid of computers (see graph 6 for a visual display of these results).

Graph 6 Arabic Language Teachers Perspectives on Computer Competence



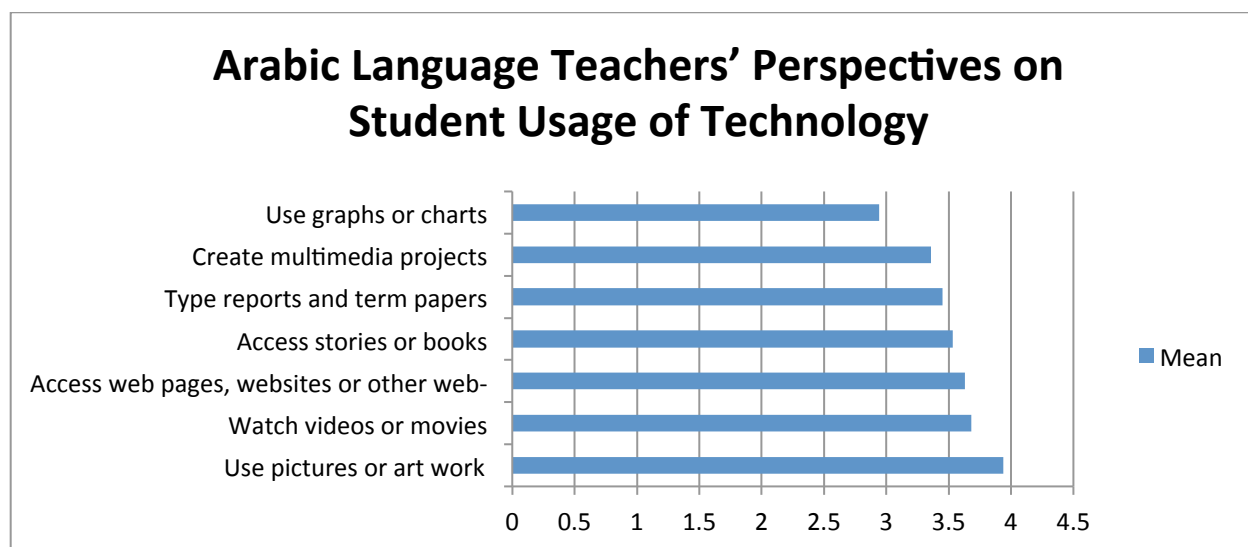
The previous results show teachers perspectives about their students competence and usage of computers. It's not a secret that children of this age are more skilled in the use of technology than the elderly. They are surrounded by technology in various forms from a very young age, so growing up using technology is part of their daily lives. These forms of technology are represented in the several electronic and computer games children play throughout their young and teen lives, in addition to the use of mobile phones, personal computers, etc. which have recently become extremely portable and affordable. Table 11 displays the extent to which students use technology in the classroom.

Table 11: <i>Arabic Language Teachers' Perspectives towards on Student Usage of Technology</i>			
	Mean	SD	Rank
1. Type reports and term papers	3.45	1.60	5
2. Create multimedia projects	3.36	1.28	6
3. Use pictures or art work	3.94	1.08	1
4. Access stories or books	3.53	1.03	4
5. Use graphs or charts	2.94	1.20	7
6. Watch videos or movies	3.68	1.20	2
7. Access web pages, websites or other web-based publications	3.63	1.30	3
Total mean	3.51	0.86	

With regard to the specified overall average of teachers' responses to the statements of this dimension, which reached 3.51 out of 5, we can conclude that students use technology the classroom "very often" from the viewpoints of Arabic language teachers. Students very often use photos, artwork, watch videos or movies, and access Web pages, websites or other publications on the Internet; as well as access stories or books in printed form to create multimedia projects (see graph 7 for a visual display of these results).



Graph 7 Arabic Language Teachers' Perspectives on Student Usage of Technology



Examining the results of the student activities in the classroom confirms the ability of students to deal with technology in the classroom, suggesting it is a good environment for the application of modern technologies in education through computer applications, and that students have proved superior prowess to handle and use these technologies.

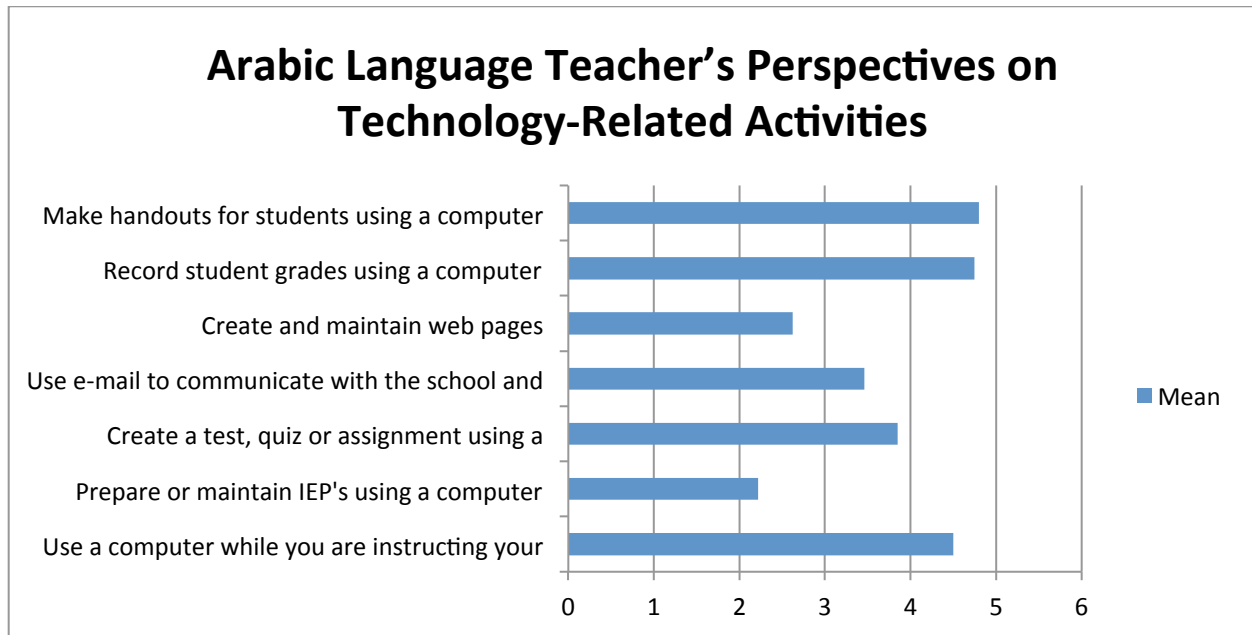
The results demonstrated in Table 12 show that Arabic language teachers report using computers very frequently to make handouts for students and use computers to record student grades, as well as in the process of instructing their class in the order of importance respectively.

Table 12: <i>Arabic Language Teachers' Perspectives on Technology Related Activities</i>			
	Mean	SD	Rank
1. Use a computer while you are instructing your class	4.50	0.87	3
2. Prepare or maintain IEP's using a computer	2.22	1.37	7
3. Create a test, quiz or assignment using a computer	3.85	1.44	4
4. Use e-mail to communication with the school and district administration	3.46	1.35	5
5. Create and maintain web pages	2.62	1.61	6
6. Record student grades using a computer	4.75	0.62	2
7. Make handouts for students using a computer	4.80	0.54	1
Total mean	3.74	0.63	

Table 12 shows the extent to which Arabic language teachers in this study report performing activities related to education technology and computers within the school environment. Given the overall average teachers' responses to the statements of this dimension, which reached 3.74 out of 5 we can conclude that Arabic language teachers perform these activities very often. While the above dimension gives us a general idea about the extent to

which Arabic language teachers carry out technology related activities in their classrooms, it is also necessary to know how teachers use each of the activities separately based on its average response. The results revealed that there are three activities (always) performed by the Arabic language teachers using technology, which include processing, formatting and printing of papers for students, recording students' grades using a computer as well as using a computer to explain the lesson in the class. We found that all of these activities were located in the average range of 4.20 to 5.00. There were two activities performed by Arabic language teachers that were rated as “very often” (to create a test or a short test by computer and use e-mail to communicate with the school and management) and its averages in the range of 3.25 to less than 4.00. The last statement (Create and maintain web pages in Internet i.e. Blog) had an average mean of 2.62 out of 5 and indicated that the Arabic language teachers sometimes perform these activities, but rarely create tests for students online, averaging about 2.22 out of 5 (see graph 8 for a visual display of these results).

Graph 8 Arabic Language Teacher's Perspectives on Technology-Related Activities



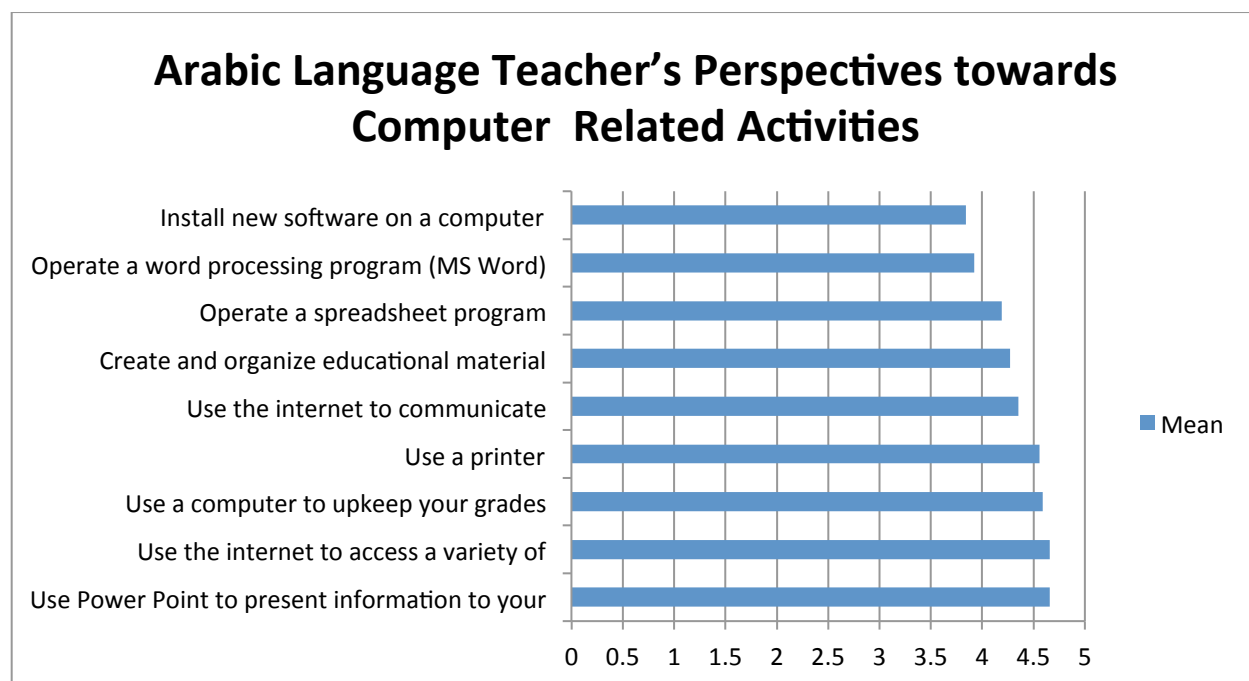
From these results, it is notable that teachers report that activities they perform are often performed inside the school and classroom and are concentrated in that they use the computer as a tool to help them to print and format papers to be presented to students; or used as a tool to record and save information. These results also reveal that teachers report that computers are used in the development of tests and communicating with school administration via e-mail. One remarkable result was for the use of computers in explaining the lessons, where the study found that this activity is ranked third with an average of 4.50 out of 5, which refers to the tendency of Arabic language teachers to use computers to help them explain the lessons for the students. Activities that require a special skill or a degree in computer programming, like creating a special page on the internet or a Blog layout, teachers report were sometimes performed by the Arabic language teachers themselves, whereas, creating a test, quiz or assignment using a computer were rarely performed by the Arabic language teachers.

Table 13 shows the extent to which Arabic language teachers performed computer-related activities such as using the internet to access a variety of information for use in presentations, and in following up with students' grades.

Table 13: <i>Arabic Language Teacher's Perspectives on Computer Related Activities</i>			
	Mean	SD	Rank
1. Use a printer	4.56	0.98	4
2. Use the internet to communicate	4.35	1.05	5
3. Use a computer to upkeep your grades	4.59	0.78	3
4. Use a Power Point to present information to your class	4.66	0.87	2
5. Create and organize educational material	4.27	0.98	6
6. Operate a processing program (Microsoft Word)	3.92	1.28	8
7. Operate a spreadsheet program	4.19	0.92	7
8. Use the internet to access a variety of information	4.66	0.62	1
9. Install new software on a computer	3.84	1.04	9
Total mean	4.34	0.63	

They were also reported operating printers and using the Internet to communicate, create and organize educational material (see graph 9 for a visual display of these results).

Graph 9 Arabic Language Teacher's Perspectives towards Computer Related Activities



They were recorded as manipulating electronic spreadsheets, operating word processors and installing new software on computers to a moderate degree.

The overall average teachers' responses to the statements of this dimension, which reached 4.11 out of 5, we can conclude that Arabic language teachers have a positive perspective to some extent towards computer related activities.

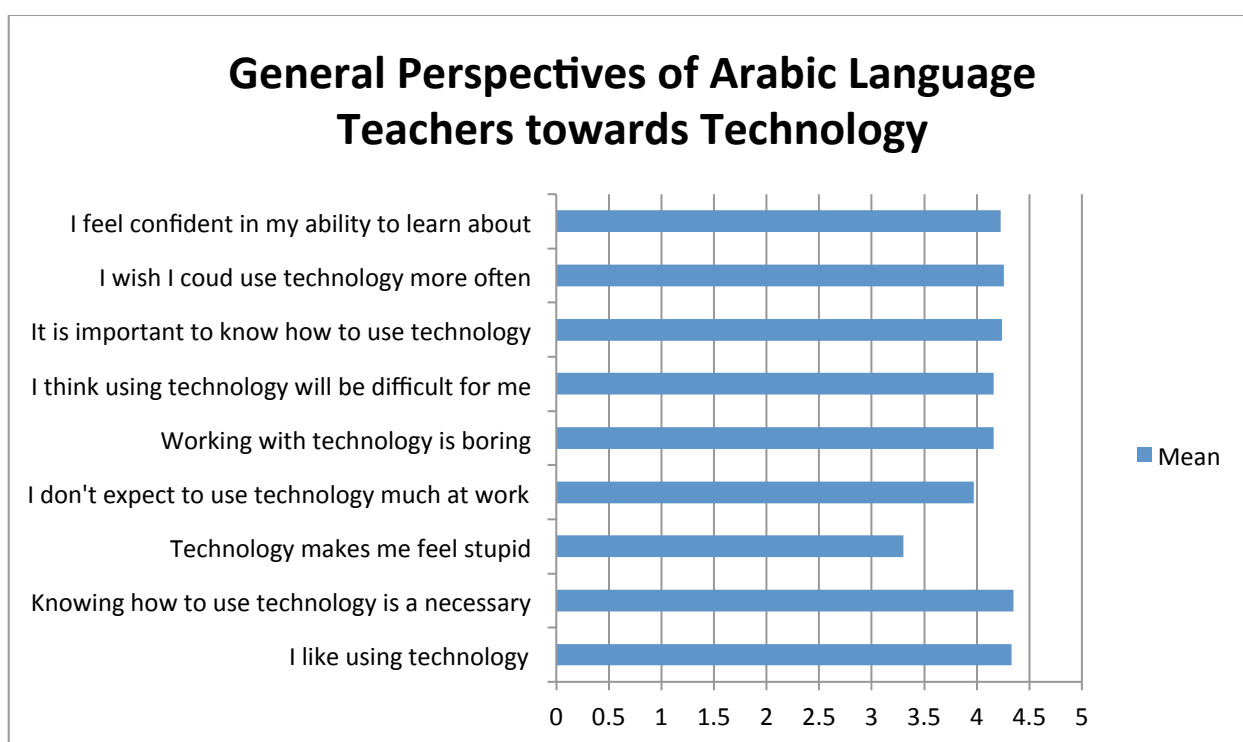
Table 14: <i>General Perspectives of Arabic Language Teachers Towards Technology</i>			
	Mean	SD	Rank
1. I like using technology	4.33	0.72	2
2. Knowing how to use technology is a necessary skill for me	4.35	0.99	1
3. Technology makes me feel stupid	3.30	1.30	6
4. I don't expect to use technology much at work	3.97	1.23	7
5. Working with technology is boring	4.16	1.03	8
6. I think using technology will be difficult for me	4.16	1.04	9
7. It is important to know how to use technology to get a good teaching position	4.24	1.02	4
8. I wish I could use technology more often	4.26	0.87	3
9. I feel confident in my ability to learn about technology	4.23	0.84	5
Total mean	4.11		0.66

The average responses of Arabic language teachers to the statements of this dimension ranged between 4.16 and 4.35 which represent that Arabic language teachers agree with some statements and strongly agree with the others. The results of Table 14 reveal that there are five

statements of this dimension strongly agreed with by the Arabic language teachers which had averages in the range of 4.20 to 5.00 (see graph 10 for a visual representation of these results), arranged as follows:

1. *Knowing how to use technology is a necessary skill for me*
2. *I like using technology*
3. *I wish I could use technology more often*
4. *It is important to know how to use technology to get a good teaching position*
5. *I feel confident in my ability to learn about technology*

Graph 10 General Perspectives of Arabic Language Teachers towards Technology



There were also four statements in the dimension of negative statements that the Arabic language teachers agreed with, averaging from 3.25 to <4.00; arranged as follows:

1. *Technology makes me feel stupid*



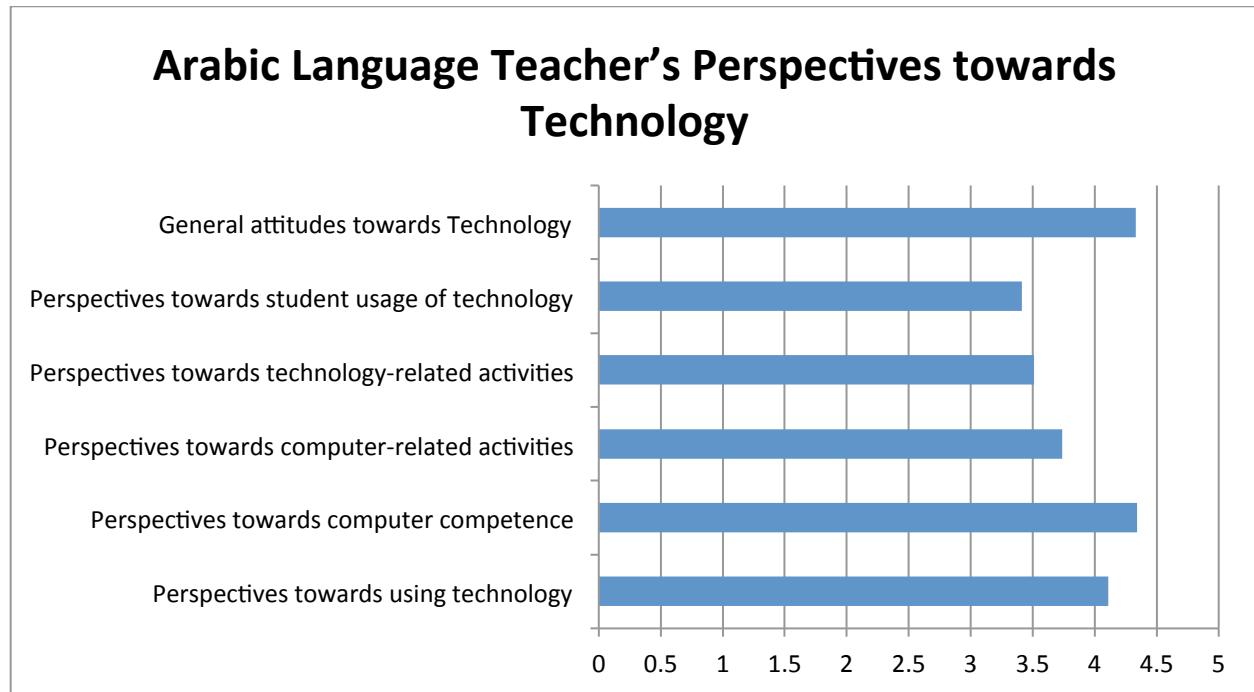
2. *I don't expect to use technology much at work*
3. *Working with technology is boring*
4. *I think using technology will be difficult for me*

Table 15 demonstrates the overall average teachers' responses to the statements of the dimensions, perspectives towards computer competence reached 4.34 out of 6 coming in first, followed by perspectives towards using technology with an average mean of 4.11. Next, perspectives towards computer-related activities had an average mean of 3.74 which came in third, followed by general perspectives towards technology with an average mean of 3.52. Perspective towards technology-related activities came in fifth with an average mean of 3.51 and perspectives towards student usage of technology came in last with a mean of 3.41.

Table 15: <i>Arabic Language Teacher's Perspectives towards Technology</i>			
<u>Dimensions</u>	<u>Mean</u>	<u>SD</u>	<u>Rank</u>
Perspectives towards Student Usage of Technology	3.41	0.59	6
Perspectives towards Technology-related Activities	3.51	0.86	5
Perspectives towards Computer-Related Activities	3.74	0.63	3
Perspectives towards Computer Competence	4.34	0.63	1
Perspectives towards Using Technology	4.11	0.66	2
General perspectives towards Technology	3.52	0.37	4

The last two dimensions were perspectives towards technology-related activities with average mean of 3.51 and perspectives towards student usage of technology with average of 3.41, respectively (see graph 11).

Graph 11 Arabic Language Teacher's Perspectives towards Technology



The two lowest dimensions were perspectives towards technology-related activities and perspectives towards student usage of computers suggesting teacher's perspectives are most negative in these dimensions.

*Research Question Two: Are there differences between the perspectives of male and female Arabic language teachers towards using technology in Arabic language instruction?*

Comparing the means of Arabic language teachers perspectives towards using technology in Arabic language instruction by gender did not show a significant difference in the perspectives of males versus females with a P-value greater than 0.05 (See Table 16).

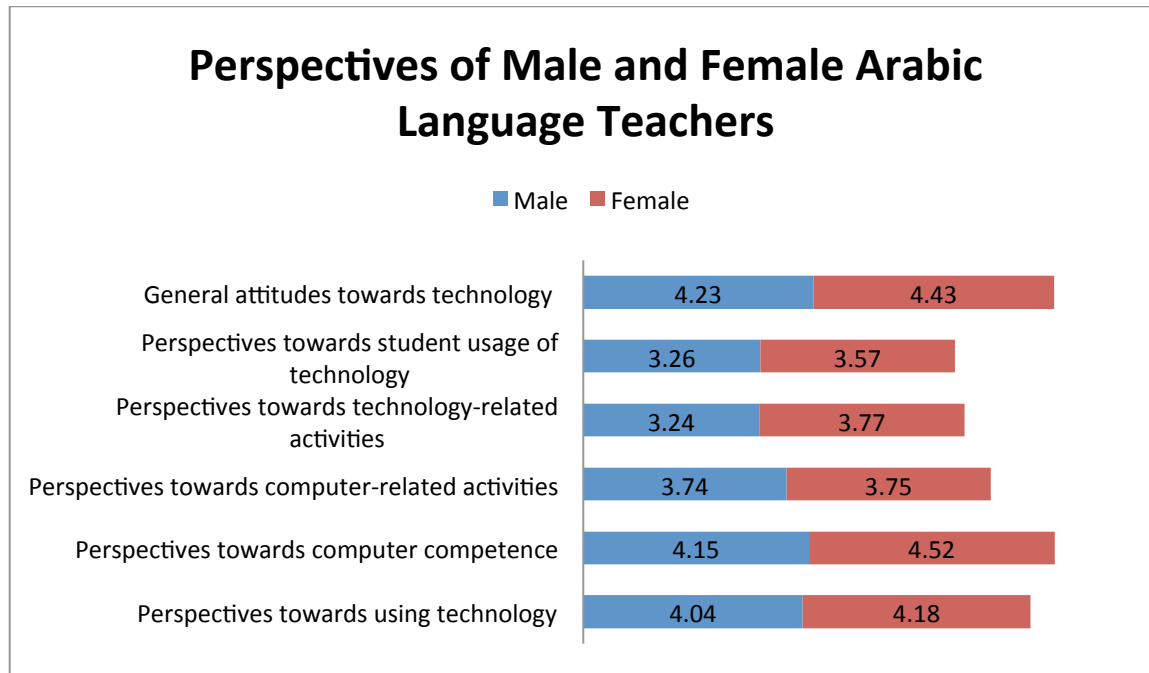
Table 16:  
*Independent Samples t-test for the Differences between Male and Female Arabic Language Teachers Regarding their Perspectives towards using Technology in Arabic Language Instruction*

<u>Dimensions</u>	<u>Gender</u>	<u>n</u>	<u>Mean</u>	<u>SD</u>	<u>t</u>	<u>Sig.</u>
Perspectives towards student usage of technology	Male	73	3.26	0.64	3.149	0.002**
	Female	70	3.57	0.50		
Perspectives towards technology-related activities	Male	73	3.24	0.74	3.867	0.000**
	Female	71	3.77	0.90		
Perspectives towards computer-related activities	Male	72	3.74	0.63	0.135	0.893(ns)
	Female	76	3.75	0.63		
Perspectives towards computer competence	Male	72	4.15	0.72	3.688	0.000**
	Female	76	4.52	0.48		
Perspectives towards technology	Male	73	4.04	0.67	1.302	0.195(ns)
	Female	76	4.18	0.64		
General perspectives towards technology	Male	73	3.42	0.38	3.570	0.000**
	Female	76	3.62	0.32		

*NB: \*\* significant at level 0.01, \* significant at level 0.05, (ns) = not significant*

However, it did reveal a significant difference in the means of perspectives towards student usage of technology, perspectives towards technology-related activities, perspectives towards computer competence and in the general perspectives categories. Table 16 presents the results of the independent samples t-test for differences in Arabic language teacher's perspectives towards using technology in Arabic language instruction by gender. As shown in table 16, the difference trend favored females due to this gender yielding the highest mean values (4.43, 3.57, 3.77, 3.75, 4.52 and 3.62 for general perspectives) respectively (See graph 12 for a visual representation of these results).

Graph 12 Perspectives of Male and Female Arabic Language Teachers



These results indicated that females Arabic language teachers have more positive perspectives towards using technology in education than male teachers.

*Research Question Three: Are there differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction?*

A one-way ANOVA test established the means of Arabic language teachers' perspectives towards using technology in Arabic language instruction based on the independent variable of experience.

Table 17:

*ANOVA for the Differences between Arabic Language Teachers' Perspectives towards using Technology in Arabic Language Instruction Based on Experience in Teaching*

		Sum of Squares	df	Mean Square	F	Sig.
Perspectives towards student usage of technology	Between Groups	9.207	4	2.302	7.422	0.000**
	Within Groups	39.075	126	0.310		
	Total	48.282	130			
Perspectives towards technology-related activities	Between Groups	12.684	4	3.171	4.525	0.002**
	Within Groups	88.994	127	0.701		
	Total	101.678	131			
Perspectives towards computer-related activities	Between Groups	5.224	4	1.306	3.466	0.010*
	Within Groups	49.359	131	0.377		
	Total	54.582	135			
Perspectives towards computer competence	Between Groups	10.900	4	2.725	7.981	0.000**
	Within Groups	44.731	131	0.341		
	Total	55.631	135			
Perspectives towards technology	Between Groups	6.870	4	1.717	4.143	0.003**
	Within Groups	54.719	132	0.415		
	Total	61.589	136			
General perspectives	Between Groups	5.107	4	1.277	11.893	0.000**
	Within Groups	14.171	132	0.107		
	Total	19.278	136			
NB: ** significant at level 0.01, * significant at level 0.05						

The perspectives include: perspectives towards student usage of computers, perspectives towards technology-related activities, perspectives towards doing computer-related activities, perspectives towards computer competence, perspectives towards technology and the general perspectives of Arabic language teachers. The F-values were 2.501, 7.422, 4.525, 3.466, 7.981, 4.143 and 11.893 respectively, with  $p < 0.01$  and  $P < 0.05$ . These means differed across the experience dimension for Arabic language teachers. Scheffe and LSD post-hoc comparisons revealed the following results:

Table 18:

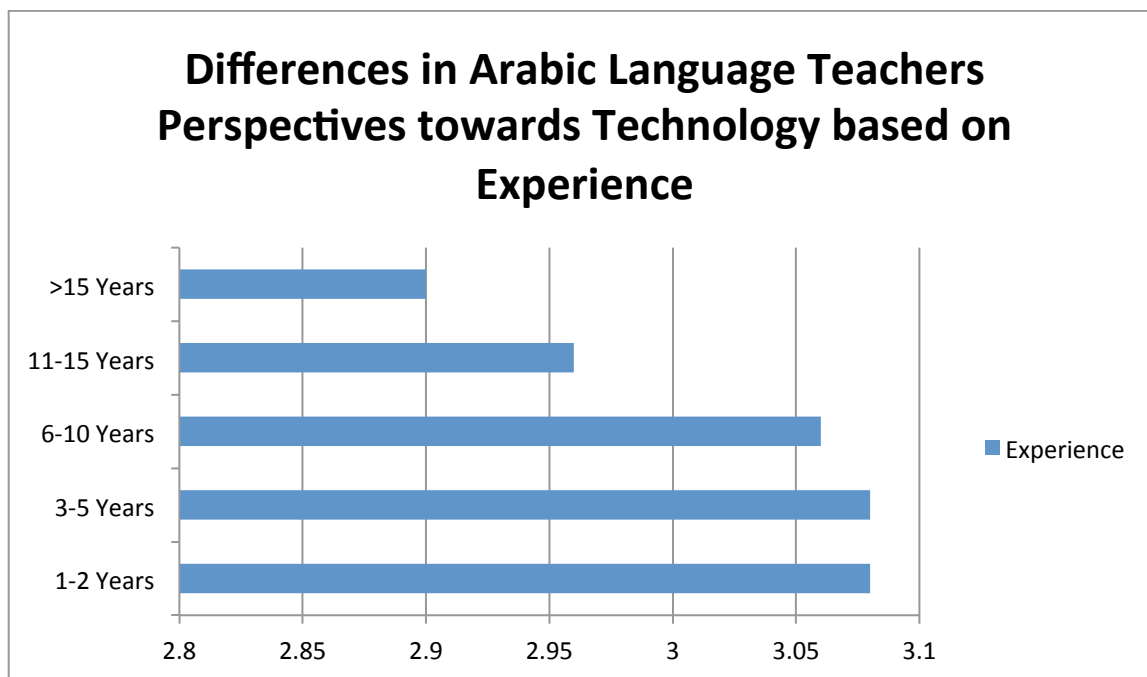
*Scheffe and LSD Post-Hoc Comparisons for Differences between Arabic Language Teacher' Perspectives towards using Technology in Arabic Language Instruction based on Experience*

Experience		N	Mean	> 15 years
Perspectives towards student usage of computers	1-2 years	7	3.33	
	3-5 years	8	3.35	
	6-10 years	35	3.72	0.61**
	11-15 years	27	3.60	0.48*
	> 15 years	54	3.11	
Perspectives towards technology-related activities	1-2 years	7	3.63	
	3-5 years	8	3.25	
	6-10 years	35	3.59	
	11-15 years	28	4.02	0.80**
	> 15 years	54	3.22	
Perspectives towards using computer-related activities	1-2 years	7	3.39	
	3-5 years	8	3.49	
	6-10 years	35	3.89	0.34*
	11-15 years	28	3.95	0.39**
	> 15 years	58	3.55	
Perspectives towards computer competence	1-2 years	7	4.41	
	3-5 years	8	4.35	
	6-10 years	35	4.59	0.59**
	11-15 years	28	4.60	0.60**
	> 15 years	58	3.99	
Perspectives towards technology	1-2 years	7	4.10	
	3-5 years	8	4.04	
	6-10 years	35	4.33	0.46*
	11-15 years	28	4.36	0.49*
	> 15 years	59	3.87	
General perspectives	1-2 years	7	3.56	
	3-5 years	8	3.49	
	6-10 years	35	3.71	0.40**
	11-15 years	28	3.72	0.41**
	> 15 years	59	3.31	
** Significant at level 0.01, * significant at level 0.05; LSD = Least significant difference				

Differences in perspectives towards technology:

The LSD test revealed that those teachers who had experience between 6 to 10 years had the highest mean of 3.06 when compared to teachers who had more than 15 years of experience in Arabic language teaching (see graph 13 for a visual of these results).

Graph 13 Differences in Arabic Language Teachers Perspectives towards Technology based on Experience

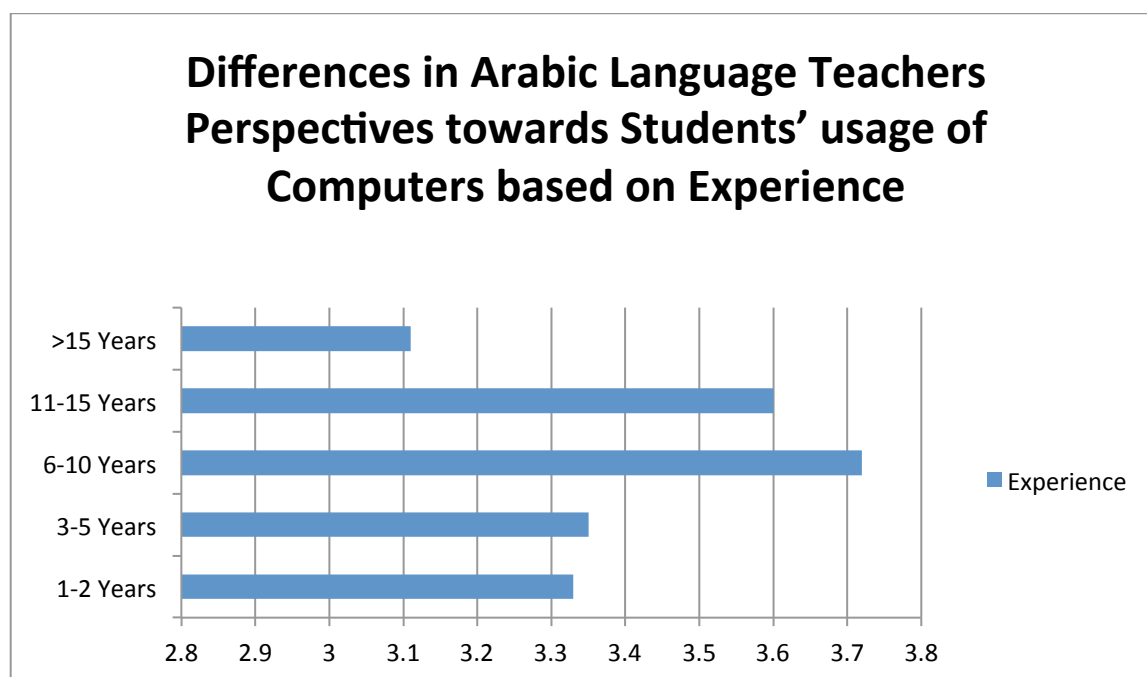


Differences in perspectives towards student usage of computers

The Scheffe test revealed that there were significant differences in Arabic language teacher's perspectives towards student usage of computers for those teachers who have experience between 6 to 10 years and 11 to 15 years and those teachers who had over 15 years of

experience. The difference was in favor of teachers who have less experience, 6 to 10 and 11 to 15 years, with means of 3.72 and 3.60 respectively (see graph 14 for a visual representation of these results).

Graph 14 Differences in Arabic Language Teachers Perspectives towards Students' usage of Computers based on Experience

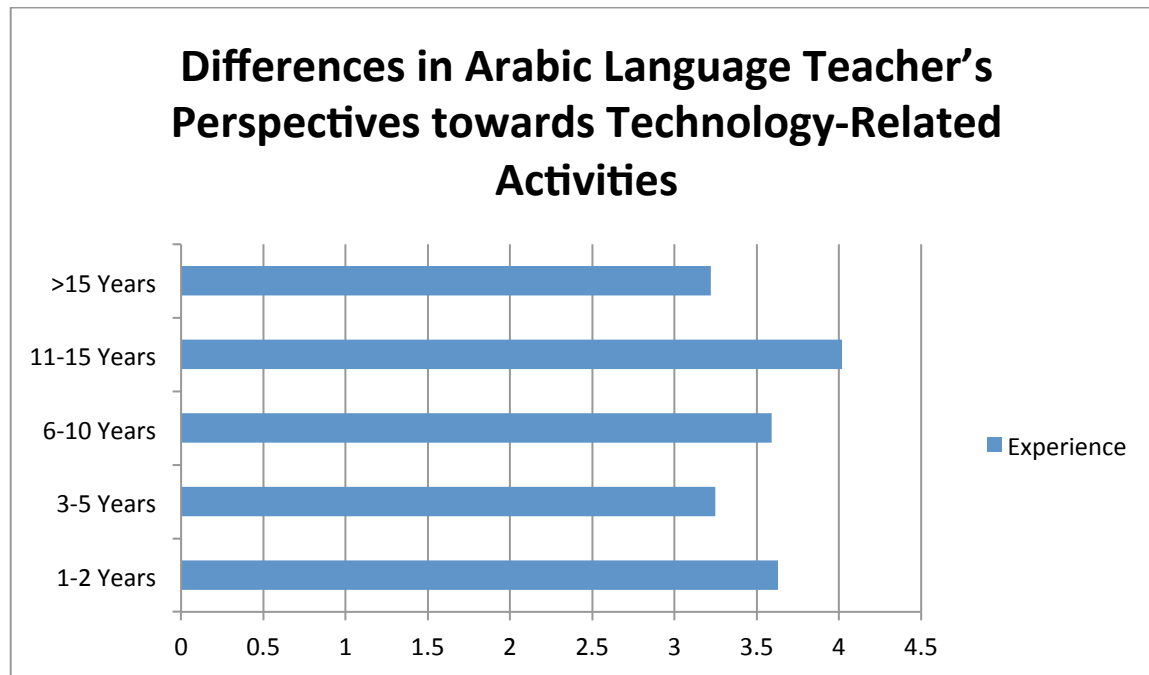


Differences in perspectives towards technology-related activities:

The Scheffe test revealed that there were significant differences in Arabic language teacher's perspectives towards technology-related activities for teachers who had experience levels of 11 to 15 years and those who had more than 15 years of experience. Teachers with less experience, 11 to 15 years, had the highest mean of 4.02 (see graph 15).



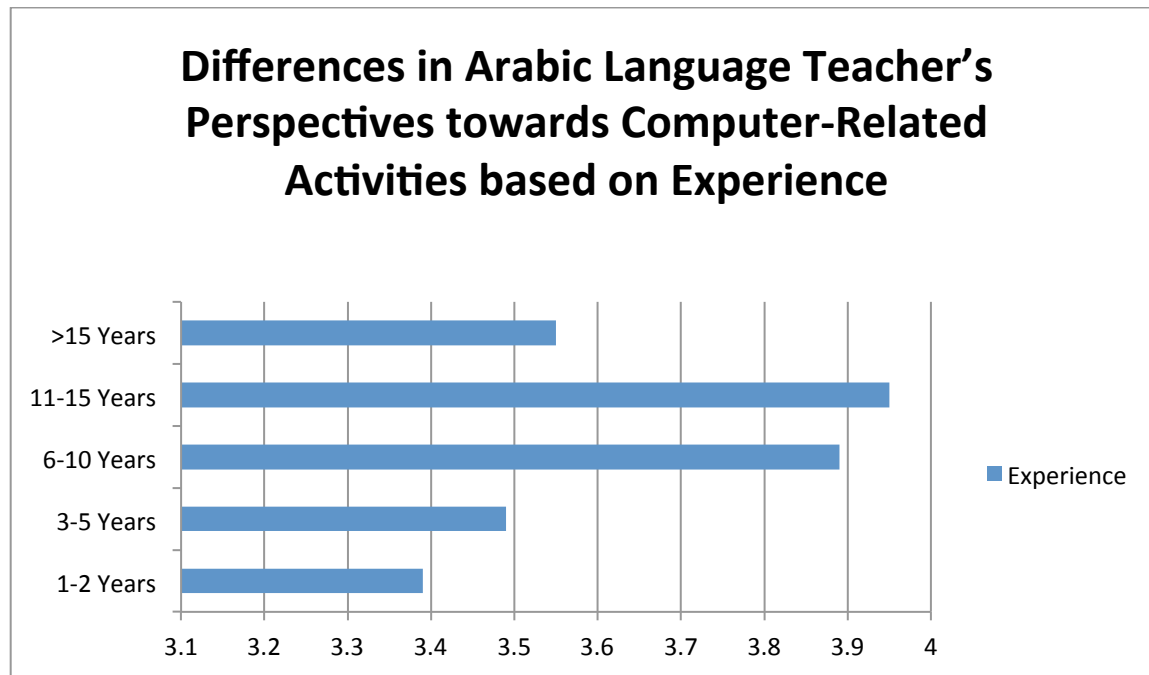
Graph 15 Differences in Arabic Language Teacher's Perspectives towards Technology-Related Activities



Differences in perspectives towards computer-related activities:

The LSD test revealed that there were significant differences in Arabic language teachers' perspectives towards computer-related activities for teachers who had experience levels of 6 to 10 and 11 to 15 years, and those who had more than 15 years of experience. Teachers who had less experience (6 to 10 and 11 to 15 years) had the highest means; 3.89 and 3.95 respectively (see graph 16).

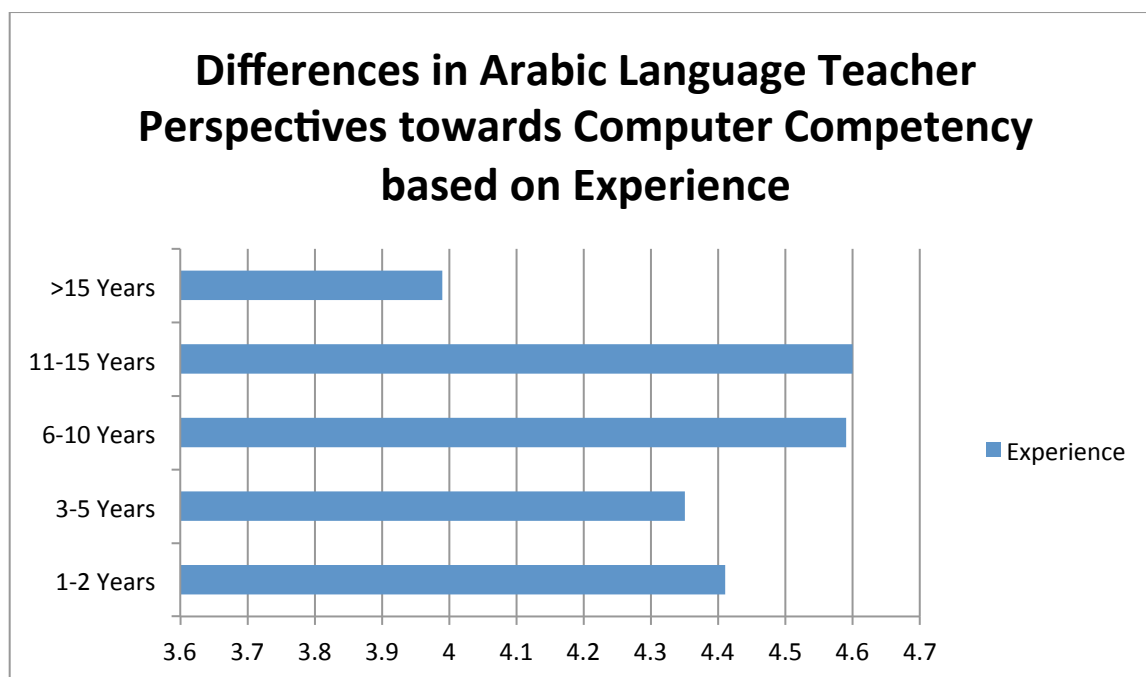
Graph 16 Differences in Arabic Language Teacher's Perspectives towards Computer-Related Activities based on Experience



Differences in perspectives towards computer competency

The Scheffe test revealed that there were significant differences in Arabic language teachers' perspectives towards computer competency for those teachers who have experience in the 6 to 10 and 11 to 15 year ranges, and those that have more than 15 years of experience. Again, the difference in means favored teachers with less experience, 6 to 10 years and 11 to 15 years, with the highest means; 4.59 and 4.60 respectively (see graph 17).

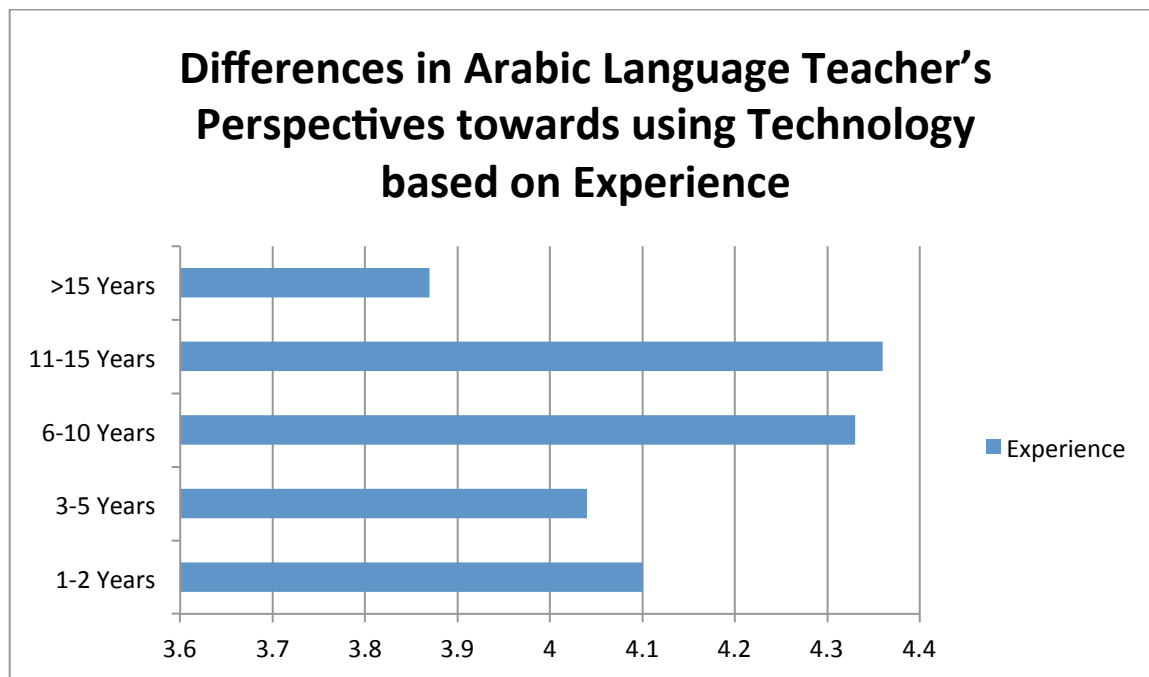
Graph 17 Differences in Arabic Language Teacher Perspectives towards Computer Competency  
based on Experience



Differences in perspectives towards using technology

The Scheffé test revealed that there were significant differences in Arabic language teachers' perspectives towards using technology for the dimension of experience. Those teachers with experience levels of 6 to 10 and 11 to 15 years had higher means; 4.33 and 4.36 respectively (See graph 18).

Graph 18 Differences in Arabic Language Teacher's Perspectives towards using Technology  
based on Experience



#### Differences in general perspectives towards technology

In this dimension, the Scheffe test revealed that there were significant differences in Arabic language teachers' general perspectives towards technology for differing experience levels (see graph 18). Teachers whose experience level was from 6 to 10 years and 11 to 15 years had higher means (3.71 and 3.72 respectively) compared to those who had experience levels greater than 15 years.

Research Question Four: Are there differences between the perspectives of younger versus older Arabic language teachers towards using technology in Arabic language instruction?

A One-way ANOVA shows the means of Arabic language teachers' perspectives towards using technology in Arabic language instruction based according to the age or teachers.

Table 19: <i>ANOVA for the Differences between Arabic Language Teachers' Perspectives towards using Technology in Arabic Language Instruction was Performed Based on Age</i>						
		Sum of Squares	Df	Mean Square	F	Sig.
Perspectives towards student usage of computers	Between Groups	9.725	3	3.242	11.846	0.000**
	Within Groups	33.386	122	.274		
	Total	43.111	125			
Perspectives towards technology-related activities	Between Groups	14.041	3	4.680	7.353	0.000**
	Within Groups	77.654	122	.637		
	Total	91.695	125			
Perspectives towards using computer-related activities	Between Groups	5.130	3	1.710	4.618	0.004**
	Within Groups	44.799	121	.370		
	Total	49.929	124			
Perspectives towards computer competence	Between Groups	22.633	3	7.544	26.966	0.000**
	Within Groups	33.853	121	.280		
	Total	56.486	124			
Perspectives towards technology	Between Groups	6.286	3	2.095	5.948	0.001**
	Within Groups	42.977	122	.352		
	Total	49.263	125			
General perspectives towards technology	Between Groups	7.046	3	2.349	26.443	0.000**
	Within Groups	10.836	122	.089		
	Total	17.881	125			
NB: ** significant at level 0.01,						

The perspectives included in the test were: perspectives towards student usage of computers, perspectives towards technology-related activities, perspectives towards computer-related activities, perspectives towards computer competence, perspectives towards technology and general perspectives towards technology. The F-values were 4.844, 11.846, 7.353, 4.618, 26.966, 5.948 and 26.443 respectively, with a P-value of <0.01 and differed across the age of the teachers. Scheffe's post-hoc comparisons revealed the following results:

<p>Table 20:  <i>Scheffe's Post-Hoc Comparisons for Differences between Arabic Language Teachers' Perspectives towards using Technology in Arabic Language Instruction based on Age</i></p>
---

Age (years)		N	Mean	Age			
				20-30	31-40	41-50	51-60
Perspectives towards student usage of computers	20-30	30	3.53			0.56**	0.51*
	31-40	62	3.64			0.68**	0.62**
	41-50	19	2.97				
	51-60	15	3.02				
Perspectives towards technology-related activities	20-30	30	3.68				0.86*
	31-40	62	3.73			0.63*	0.90*
	41-50	19	3.11				
	51-60	15	2.83				
Perspectives towards using computer-related activities	20-30	30	3.69				
	31-40	62	3.87				0.63**
	41-50	18	3.60				
	51-60	15	3.24				
Perspectives towards computer competence	20-30	30	4.55			0.75**	1.13**
	31-40	62	4.58			0.78**	1.15**
	41-50	18	3.80				
	51-60	15	3.42				
Perspectives towards using technology	20-30	30	4.28				0.59*
	31-40	62	4.32				0.63**
	41-50	19	3.94				
	51-60	15	3.69				
General perspectives	20-30	30	3.66			0.44**	0.59**
	31-40	62	3.68			0.47**	0.62**
	41-50	19	3.22				
	51-60	15	3.07				
** Significant at level 0.01, * significant at level 0.05;							

### Differences in perspectives towards student usage of computers

For this research question, Scheffe test revealed that there were significant differences in Arabic language teachers' perspectives towards student usage of computers in teachers aged 20 to 30 years and 31 to 40 years compared to those who were aged 41 to 50 and 51 to 60 years old. The difference favored the younger teachers who were aged 20 to 40 years old with the highest means of 3.53 and 3.64 respectively.

### **Differences in perspectives towards technology -related activities**

The Scheffe test revealed that there were significant differences in Arabic language teachers perspectives towards technology-related activities for teachers aged 20 to 30 years and those aged 51 to 60 years old. The difference was in favor of younger teachers aged 20 to 40 years who had the highest mean of 3.68. Also, there were significant differences between teachers aged 31 to 40 and those who aged 41-50 and 51 to 60 years old. In this age category, the difference was also in favor of the younger teachers aged 31 to 40, represented by a mean of 3.73.

### **Differences in perspectives towards computer-related activities**

The Scheffe test revealed that there were significant differences in Arabic language teachers' perspectives towards computer-related activities in teachers aged 31 to 40 years and teachers aged 51 to 60 years old. The difference for this category was in favor of younger teachers 31 to 40 years old who had the highest mean of 3.87.

### **Differences in perspectives towards computer competence**

The Scheffe test revealed that there were significant differences in Arabic language teachers perspectives towards computer competency in teachers aged 20 to 30 years and those who were aged 41-50 and 51 to 60 years old. The difference favored the younger teachers aged 20 to 30 years old with a mean of 4.55. Similarly, the Scheffe test revealed that there were significant differences in Arabic language teachers' perspectives' towards computer competency in teachers who were aged 31 to 40 and those aged 41-50 and 51 to 60. This difference was also in favor of the younger teachers aged 31 to 40 years old, who had a mean of 4.55.

### **Differences in perspectives towards using technology**

The Scheffe test revealed that there were significant differences in Arabic language teachers' perspectives towards using technology between younger teachers aged 20 to 30 years old and teachers 31 to 40 years old and teachers 51 to 60 years old. The difference favored younger teachers who had means of 4.28 and 4.32 respectively.

### **Differences in general perspectives towards technology**

The Scheffe test revealed that there were significant differences in Arabic language teachers' general perspectives towards technology for teachers aged 20 to 30 years and those aged 41-50 and 51 to 60 years old. The difference was in favor of younger teachers aged 20 to 30 who had the highest mean of 3.66. In the same way, the Scheffe test revealed that there were significant differences in Arabic language teachers general perspectives towards technology, between teachers aged 31 to 40 years and those who aged 41-50 and 51 to 60 years old. This difference was also in favor younger teachers aged 31 to 40 years old with a mean of 3.68.

### **Research Question Five: Are there differences between the perspectives of teachers who have different levels of education?**

A one-way ANOVA shows the means of Arabic language teachers' perspectives towards using technology in Arabic language instruction according to the level of education of teachers; where  $F$ s  $P$ - values were not significant ( $P > 0.05$ ).



Table 21: <i>ANOVA for the Differences between Arabic Language Teacher's Perspectives towards using Technology in Arabic Language Instruction based on Education Level</i>						
		Sum of Squares	df	Mean Square	F	Sig.
Perspectives towards student usage of computers	Between Groups	2.350	3	0.783	2.289	0.081(ns)
	Within Groups	46.881	137	0.342		
	Total	49.230	140			
Perspectives towards technology-related activities	Between Groups	1.589	3	0.530	0.703	0.552(ns)
	Within Groups	103.931	138	0.753		
	Total	105.520	141			
Perspectives towards computer-related activities	Between Groups	1.522	3	0.507	1.302	0.276(ns)
	Within Groups	55.348	142	0.390		
	Total	56.870	145			
Perspectives towards computer competence	Between Groups	1.099	3	0.366	0.901	0.443(ns)
	Within Groups	57.734	142	0.407		
	Total	58.833	145			
Perspectives towards technology	Between Groups	1.176	3	0.392	0.908	0.439(ns)
	Within Groups	61.726	143	0.432		
	Total	62.902	146			
General perspectives	Between Groups	0.386	3	0.129	0.963	0.412(ns)
	Within Groups	19.127	143	0.134		
	Total	19.513	146			
NB: (ns) not significant,						

We can conclude that level of education has no effect on Arabic language teachers' perspectives towards technology.

### Testing Hypotheses of the Study

#### Research Hypotheses:

1. Arabic language teachers have positive perspectives towards using technology
2. There are differences between the perspectives of male and female Arabic language teachers towards using technology in Arabic language instruction.

3. There are differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction.
4. There are differences between the perspectives of younger and older Arabic language teachers towards using technology in Arabic language instruction.

There are differences between the perspectives of teachers with different levels of education towards using technology in Arabic language instruction.

Testing Hypothesis One:

H<sub>1</sub>: Arabic language teachers have a positive perspective towards using technology

In table 9, average means were produced for Arabic language teachers' perspectives towards technology. With regard to the overall average teachers' responses to the dimensions, perspectives towards technology, we find that overall average means of the perspectives dimension lies in the range of (Strongly agree, Agree, Always and very often) which represent positive perspectives towards technology. Therefore, we accept the hypothesis. This study reports that Arabic language teachers have positive perspectives towards using technology.

Testing Hypothesis Two:

H<sub>1</sub>: There are differences between the perspectives of male and female Arabic language teachers' towards using technology in Arabic language instruction.

The Independent Samples t-test was utilized to test the differences between male and female Arabic language teachers' perspectives towards using technology in Arabic language instruction. As shown in Table 10, the results of t-test showed that there are significant differences between male and female Arabic language teachers regarding their general

perspectives towards using technology in Arabic language instruction, favoring females ( $t=3.570$ ,  $P$  value 0.000 with significant values of less than 0.001). Therefore, we accept the hypothesis which states: There are differences between the perspectives of male and female Arabic language teachers' towards using technology in Arabic language instruction.

Testing Hypothesis Three:

H<sub>1</sub>: There are differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction.

An ANOVA test was utilized to test if there were differences between the perspectives of more and less experienced teachers' towards using technology in Arabic language instruction. As shown in Table 11, the results of the ANOVA test showed that there are significant differences in Arabic language teachers general perspectives' towards using technology in Arabic language instruction ( $F=11.893$ ,  $P$  value 0.000 with significant values of less than 0.001). Therefore, we accept the hypothesis which states: There are differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction. Teachers who had less years of experience teaching the Arabic language had more positive perspectives towards using technology in their teaching. On the contrary, teachers with more experience responded negatively to the idea of using technology in their Arabic language instruction.

Testing Hypothesis Four:

H<sub>1</sub>: There are differences between the perspectives of younger and older Arabic language teachers towards using technology in Arabic language instruction.

An ANOVA test was utilized to test if there were differences between the perspectives of younger and older teachers towards using technology in Arabic language instruction. As shown in Table 13, the results of the ANOVA showed that there are significant differences in Arabic language teachers general perspectives' towards using technology in Arabic language instruction ( $F=26.443$ , P value 0.000 with significant value of less than 0.001). We accept the hypothesis which states: There are differences between the perspectives of younger and older Arabic language teachers towards using technology in Arabic language instruction, favoring younger teachers.

*Testing Hypothesis Five:*

H<sub>1</sub>: There are differences between the perspectives of teachers with different levels of education towards using technology in Arabic language instruction.

An ANOVA test was utilized to test if there were differences between the perspectives of teachers with different levels of education towards using technology in Arabic language instruction according to their education. As shown in Table 15, the results of the ANOVA showed that there are no significant differences in Arabic language teachers' general perspectives towards using technology in Arabic language instruction according to education ( $F=0.963$ , P value 0.412 which is more than 0.05). Therefore, we accept the hypothesis which states: There are differences between the perspectives of teachers with different levels of education towards using technology in Arabic language instruction.

Responses

There are three questions at the end of the questionnaire specifically aimed and designed to increase response rates among the study sample and increase response rates to the closed questions included in the main questionnaire. Additionally, they allow respondents to add other things not included in the closed questions. In the next section we will analyze the responses of the study sample regarding the open questions, namely:

1. Do you think that the use of technology in teaching Arabic language helps to learn the language more or less? Why is that?
2. In your opinion, what are the obstacles that constrain the use of Arabic language teachers of technology in the teaching process?
3. What are the most important problems that constrain Arabic language teachers use of technology?

Here we find that 130 out of 149 respondents answered the three questions completely with a response rate of 87.2%. This percentage indicates the interest of Arabic language teachers towards the use of technology in the education process and their willingness to help in developing solutions to solve problems and obstacles to using technology in education. Contrarily, we found that only 18.8% of the study sample did not answer the open questions.

First Question: Do you think that the use of technology in teaching Arabic language helps to learn the language more or less? Why is that?

The results of the analysis of this question showed that 128 participants of the study sample answered with a response rate of 89.1% and stated that the use of technology in teaching Arabic language helps students to learn more, while 10.9% of the sample answered negatively.

They believe that the use of technology in teaching Arabic language helps less in learning the language.

For the study samples who expressed the opinion that the use of technology in teaching the Arabic language helps in learning the language, the most important reasons mentioned were summarized below. The following six points were selected according to how relevant they were to the focus and content of this study, and according to recurring themes among the whole sample who believed that the use of technology in teaching Arabic language helps in learning the language. Their responses are as follows:

1. The form and information appearance, which can be obtained from the use of technology
2. Browse the latest new technologies and keep abreast with developments
3. Multiple sources of knowledge
4. Accuracy of the information and speed of achievement
5. Useful Scientific websites
6. Extract information from the websites and print publications or photos which serves lesson

The results suggest that teachers' perspectives towards technology used in schools tends to be positive, where we find that most of the study sample emphasized that the use of technology in teaching Arabic language helps to a large extent in learning the Arabic language. They also expressed that technology makes classes more interesting through the presentation of information in interesting and attractive forms so that it works to attract students. This is in line with modern times, along with requiring a lot of time and effort. Others indicated that the technology is employed for the appropriate job position, but doesn't consistently give the desired

result because of its attractiveness and ability to draw attention. Still, others responded that the use of technology in teaching Arabic language helps greatly since it is one of the important sources of knowledge for students and teachers equally. Furthermore, they explained that when the Internet was used in classrooms, students appreciated the rich resources and the increased accessibility of information provided by the Internet, making the school environment attractive for students. They went on to further explain the use of technology in teaching helps to simplify and present information in interesting and entertaining manners.

Another view expressed by the study sample was that the use of technology in teaching the Arabic language is indispensable. They see it as an important component in helping teachers teach and students learn, by enabling them to become more familiar with the latest technology and gain experience with scientific and educational developments. Through browsing the Internet and gathering information of different forms (sound, photos, movies etc.) and utilizing them to open new areas of discovery for the teachers and students, the classroom is transformed into an exciting learning experience. Technology helps save time and effort for teachers and students, and enables them both to reach the objectives of the lesson

Moreover, one of the reasons stated by the study sample for why they support the use of technology in education, especially in the teaching of the Arabic language, was that they thought that its use increases the multiplicity and diversity of knowledge sources and methods, allowing greater comparability and measurement in the presence of suitable scientific material and a lot of information.

Other reasons stated by the study sample, which underlines the importance of the use of technology in Arabic language instruction, were that computers and their applications and software help in the teaching of Arabic language. An important observation was that all the

teachers acknowledged that students like technology, especially computers. It is their way of picking up information, in addition to gaining more accurate information. We also found that some of the study sample believes that technology is important in general, especially in presenting examples and illustrations. There are many useful websites that can help students learn research skills and develop their critical thinking skills by requiring them to search for information and discern strong information from weak sources. Accessing the information is simple, but the process of analyzing information is what really helps to consolidate, clarify and simplify the information since students will be using all of their senses (hearing, seeing, and interacting and participating). All of these experiences help in teaching the Arabic language by extracting information from the Internet, print publications or pictures that serve the lesson. Additionally, the sample believed that the development of curriculum advocated the development of instructing methods through the use of technology, computer software and support tools.

We have mentioned at the beginning of this section that a percentage of 10.9% of the study sample believe that the use of technology in teaching Arabic language helps less in learning the Arabic language. One of the reasons expressed in defense of this opinion was that the use of technology represented in the use of multiple-computer software, such as word processing programs (Microsoft Word), weakens the writing skills among students. Furthermore, the use of technology does not teach the basic skills of the Arabic language and undermines the importance of physically writing the Arabic language which is the skill of writing calligraphy. They also believed that the use of technology in the teaching of the Arabic language distorts the teaching of the Arabic language by taking away the personal interaction that helps language learner's make connections and interact with the culture of the language.



Second Question: In your opinion, what are the obstacles that constrains the use of Arabic language teachers of technology in the teaching process?

The analysis of this question showed that the question had been answered by 123 participants of the study sample with a response rate of 94.6%. Of the sample, 86.2% stated that there were obstacles, but 8.4% said that there were no obstacles or constraints of Arabic language teachers using technology in the teaching process.

It is important to mention that the teachers of this study were confused about the obstacles and problems of using technology in Arabic language instruction. Many of them were unsure about the exact meaning of “obstacles and problems” relating to Arabic language instruction. After deeper analysis we concluded that the obstacles and constraints of using technology in Arabic language instruction were as follows:

1. Obstacles related to the perspectives of teachers towards technology
2. Obstacles related to insufficient technology experience and training among teachers
3. Obstacles related to the Arabic language itself
4. Obstacles related to material conditions
5. Work load
6. Time constraints

Obstacles related to the perspectives of teachers towards technology

We found that the teachers in the sample who were older and more experienced tended to prefer traditional teaching methods such as using blackboards and chalk, rather than using new technology in the education process. Another perspective discovered was a lack of confidence on the part of teachers in the importance of technology in the education process. Particularly, some

teachers were not familiar with how to use computers, especially those from older generations. Others felt that technology has a negative impact on Arabic language education and questioned the usefulness of e-learning all together, stating that it was a waste of time.

Through the analysis of responses of Arabic language teachers to the obstacles that limit teachers use of technology in Arabic language instruction, rigidity was observed, which can be ascribed to the widespread belief that the Arabic language is itself rigid and cannot be instructed by varied methods. This may be due to certain educational environments not keeping up with modern thought in the educational and scientific fields or resistance to change. Other teachers expressed no desire to learn and use technology in the Arabic language teaching process, in addition to a fear of the use of devices and technologies. Finally, some teachers mentioned that to impose technology in the Arabic language education process as a measure of proficiency of the work, could possibly be one of the obstacles that limit teachers to use technology in education.

Obstacles related to insufficient technology experience and training among teachers:

For this category of obstacles, we found that some of the teachers indicated that the obstacles of using technology in education refer to teachers' insufficient technology knowledge and skills, or the teachers' weaknesses in this area. Others indicated obstacles such as the lack of familiarity with technology, low technology literacy, lack of knowledge on how to use computers, insufficient education and courses required in the field of technology and the lack of training for teachers in the use of computer programs, websites and how to use them. A lack of resources to help in using technology was also cited as an obstacle.

Obstacles related to the Arabic language itself:

In regards to the obstacles related to the Arabic language itself, we established that some of the teachers indicated that some of the branches of the Arabic language cannot be computerized. Using computer technology with these branches is not suitable for Arabic language instruction. Sometimes clarification is needed of grammatical rules and literature texts require repeated explanations and analysis, making the use of technology in education very difficult. Other teachers indicated that a lack of computerized topics and scarcity of scientific subjects in the Arabic language are important factors that constrain the use of technology in the Arabic language teaching process.

Obstacles related to material conditions:

When examining obstacles related to material conditions, we found that some teachers indicated the unavailability of internet connection in the work area and inside classrooms as a huge obstacle of using technology in Arabic language instruction. We also uncovered insufficient materials, like the appropriate number of computers, to be an obstacle. Other teachers referenced obstacles in using technology in the Arabic language education process as financial obstacles which limit the availability of suitable technology equipment, in addition to the accidental crashes leading to downtime.

Obstacles related to work load:

Some of teachers indicated that workload management (increased number of classes and numerous activities) slows down the success of computer-related Arabic language instruction in the classroom, in addition to routine work pressures.

### Obstacles related to availability of time:

For the obstacles related to the availability of time, we found that some teachers indicated other non-material obstacles such as time management (scheduling sufficient computer time for students and insufficient teacher time) and the lack of adequate and appropriate time to use technology.

### Third Question: What are the most important problems that constrain Arabic language teachers' use of technology?

The analysis of this question shows that the question has been answered by 104 participants of the study sample with a response rate of 80%. Of the participants, 73.1% stated that there were problems, but 6.9% said that there were no problems facing the use of technology in Arabic language instruction. The problems mentioned by the participants are summarized below. These problems were selected according to how relevant they were to the focus and content of this study, and according to recurring themes among the those participants who believed that there were problems facing the use of technology in Arabic language instruction.

They summarized are as follows:

1. The nature of the Arabic language, especially with regards to emotion and feeling
2. The need for repetition, clarification and simplification during class with the presence of constant content
3. Technology does not help with developing listening skills and literary appreciation for prose and poetic texts
4. Student listening and comprehension skills may not be strengthened by technology
5. Sudden and timely malfunctions in the hardware

6. Work pressure
7. Insufficient classroom resources makes some teachers rely on traditional instruction methods
8. The classroom environment
9. Number of students
10. The inability to use technological devices, and inability to adapt to new technology
11. Training and materials
12. Failure to obtain the ICDL certification:
13. Some programs need the English language
14. Lack of consistent and reliable internet connection in the classroom
15. Lack of up-to-date technologies and devices
16. Students lack of knowledgeable about the use of some computer programs
17. Lack of technical support
18. Fear of access to some sites during class time, that may be wrongly understood by the management

The list of problems that survey participants came up with reflects various levels of understanding about what “usage of technology” actually is. Richey (2008) defines technology usage as “The learning and improving of performance by creating, using and managing appropriate technological processes and resources.” Therefore, there seems to be a misunderstanding amongst the teachers who said, for example, “the nature of the Arabic language, especially with regards to emotion and feeling” and “the need for repetition, clarification and simplification during class with the presence of constant content”. These

responses are geared more towards challenges of learning the Arabic language in general, and not specifically about problems implementing technology in instruction.

On the other hand, many problems listed are supported by research and studies as problems that must be overcome for successful implementation of technology into classroom instruction to occur. Of the problems listed, “sudden and timely malfunctions in the hardware”, “the inability to use technological devices”, “training and materials” and “Lack of technical support” are only some of the crucial problems that must be addressed before successful implementation of technology into classroom instruction can occur. Anderson and Strother (2011) explain that in the absence of adequate technical support and knowledge on how to use technological devices, teachers are likely to use technology and digital media as “props” as opposed to actually incorporating them into their instructional styles.

These responses provide very useful information to researchers about teacher’s true understanding of the term “technology usage. They also provide key insights into what barriers really do exist for teachers and inspires thought and research behind what can be done to break down these barriers.

## Chapter 5

### CONCLUSIONS & RECOMMENDATIONS

The need for the current study stemmed from the importance of using technology in Arabic language instruction across the UAE. As stated before, one of the UAE government's main goals currently is to prepare its students to reach high proficiency levels in English *and* Arabic to equip them with the necessary language skills to function in the global marketplace. This goal necessitates research into the topic of integrating technology into classroom instruction, focusing on teachers' perspectives towards such a strategy, as well as barriers that may exist when trying to attain this integration. The aim of the study was to examine the perspectives of teachers who belong to a variety of categories including: males and females, more and less experienced teachers and younger and older teachers. The study also examined if there is a significant positive or negative impact of using technology in Arabic language instruction. The research study addressed the following research questions:

1. What are Arabic language teacher's perspectives towards technology and teaching?
2. Are there differences between the perspectives of male and female Arabic language teachers towards using technology in Arabic language instruction?
3. Are there differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction?
4. Is there a difference between the perspectives of younger or older Arabic language teachers towards using technology in Arabic language instruction?
5. Is there a difference between the perspectives of Arabic language teachers with different levels of education towards using technology in Arabic language instruction?

The purpose of this quantitative, descriptive study was to examine the relationship between the different variables and teachers' perspectives towards technology usage in their instruction of the Arabic language. The variables involved were examined by using a web-based survey (Appendix B) compiled from questions on the USEIT teacher survey (Appendix E) and the Technology Attitude Survey (Appendix D). The research methods employed, as outlined in chapters 3 and 4, included defining the variables, collecting the data, and analyzing the data using one-way ANOVA and Cronbach's Alpha analysis. These analyses were performed to assess relationships of the independent variables of gender, experience level and age with the dependent variables of technology use and the perspective of teacher's towards technology. There were five hypotheses offered in the study.

The following limitations, as outlined in chapter 1, may have affected the results of this study. They are:

1. The participants of the study may have miscalculated how much they actually use technology in their teaching.
2. Participants not completing the survey due to lack of interest, fear of exposure, or because they did not want to answer all the questions.

The purpose of Chapter 5 is to elaborate on the data analysis that was started in Chapter 4. This deeper analysis will be divided into the following parts: interpretation and meaning of the research and findings, implications of the study, recommendations for stakeholders and recommendations for future research. A discussion of where the study fits into current studies and theory will be discussed.

#### Meaning of Research Findings



Teachers in all the different categories and across various districts in the UAE were asked to partake in an online survey regarding their perspectives, opinions and usage of technology in their teaching. One hundred and forty nine Arabic language teachers completed the questionnaires. The survey also contained demographic questions about age, gender and level of career experience.

Hypothesis H1: Arabic language teachers do have positive perspectives towards using technology. Hypothesis 1 was accepted based on the results of one-way ANOVA which reflected that teacher's perspectives had an overall higher mean indicative of positive perspectives (Strongly Agree, Agree, Always and Very Often). For this reason, the hypothesis was accepted. Teachers' perspectives were examined within various dimensions, such as computer usage, computer-related activities performed by students and teachers, computer competence, and the overall perspective of teachers towards technology usage. Teachers responded positively overall, although there were dimensions which had lower means than others, indicating a more negative perspective towards these dimensions, including technology-related activities performed by students in the classroom and student usage of computer's. Based on these means, more research should be conducted to uncover why teachers tend to have more negative perspectives towards technology-related activities performed by students in the classroom and student usage of computers.

One explanation of these findings might be that, historically, the educational system in United Arab Emirates tends to be more teacher-centered rather than student-centered. This approach could account for the lack of interest in teachers to utilize technology more, or encourage student/computer-based learning. Heitin (2013) explained that teachers must make

crucial decisions about how to manage technology in their classrooms, and more importantly they must decide how much responsibility and independence their students will have to work with and manipulate the technology (Heitin, 2013). If Arabic language teachers in the UAE can migrate from a teacher-centered approach to a student-centered approach, they can begin to change their perspectives about technology, and find ways to work *with* technology to achieve their goals.

Heitin (2013) highlights difficulties that some teachers have in controlling students' usage of technology. She writes that some teachers feel like using technology in teaching is a "new frontier" and that many teachers feel that they are "naive" when it comes to technology. She continues that many teachers are uncomfortable using the technology in their classrooms, which can lead them to not wanting to use it, or mistrusting the students to utilize the technology in classroom learning. If Arabic language teachers in the UAE can become more knowledgeable about how to use technology via in-service and hands-on learning, they can learn new ways to manage the technology they use in their classrooms, as well as trust their students to learn using these tools. It is the consistent and early exposure to technology in environments like in-service training that can help educators become more comfortable with technology, and learn to develop more positive perspectives regarding it.

Hypothesis H2: There are differences between the perspectives of male and female Arabic teachers towards using technology in Arabic language instruction. Based on the Independent Samples t-test analysis, the hypothesis is accepted. There was no significant difference in the *overall* perspectives of male and females towards technology usage in Arabic language instruction. However, the results showed that there are significant differences between

males and females for certain dimensions. For example, male and female Arabic language teachers differ greatly in their perspectives towards the dimensions of technology-related activities performed by the student's in the classroom and towards computer competence. The difference in this dimension showed females to have more positive perspectives, due to the category yielding the highest mean values. This means that females were found to have more positive perspectives towards technology-related activities performed by the student's in the classroom and towards computer competence. It is interesting that the overall perspective of males and females towards using technology in Arabic language instruction did not differ, but in specific dimensions they did. What could be the possible cause(s) of this significant difference in perspectives for these dimensions?

Interestingly, the specific dimensions that females and males differed were perspectives towards technology-related activities performed by students in the classroom and computer competence, with females expressing more positive perspectives. One theory that might help to explain the differences is rooted in gender studies. Margaret Brenston (2011) explains that historically, technology has been geared towards males, and that they have been raised by society to be more apt and comfortable around technology. It is possible that for the dimensions that differed between the males and females in this study, the root is that females are less comfortable, in general, with technology and therefore have more negative perspectives towards computer competency as well as technology-related activities that student's perform in classrooms. This theory is examined in more detail by Brenston (2011). Looking at Brenston's findings in light of this research, it is possible that a complete paradigm shift in how men and women are viewed in relation to technology must occur. Brenston (2011) proclaims, "The whole realm of technology and the communication around it reinforces the idea of women's

powerlessness” (par. 20). This is an area that deserves more research. Of particular interest is how gender-relations specifically in the UAE and Middle East affect technology usage in classrooms, and amongst male and female teachers.

Hypothesis H3: There are differences between the perspectives of more and less experienced teachers towards using technology in Arabic language instruction. The perspective dimensions tested were: perspectives towards student usage of computers, perspectives towards technology-related activities, perspectives towards computer-related activities, perspectives towards computer competence, perspectives towards technology usage and general perspectives. The F-values were 2.501, 7.422, 4.525, 3.466, 7.981, 4.143 and 11.893 respectively, with  $p < 0.01$  and  $P < 0.05$ . The hypothesis in this instance was accepted. An ANOVA test was utilized to test for these differences. While this study yielded that there are significant differences between experience levels, Compeau and Higgins (1995) showed a strong relationship between self-efficacy and computer use. In their study, they pointed out that individuals with high efficacy tended to use computers more, and enjoyed the act of using computers more, while experiencing less anxiety. Compeau’s and Higgins’s (1995) study suggested that there are more complex factors influencing technology integration than simply teachers’ perspectives towards technology usage in their teaching. This study adds to the body of knowledge about technology integration by showing that teachers of different experience levels have significant differences in their technology integration. The results showed that for every dimension tested in this study; less experienced teachers have more positive perspectives.

Hypothesis H4: There are differences between the perspectives of younger and older Arabic language teachers towards using technology in Arabic language instruction. This hypothesis was accepted on the basis of the one-way ANOVA, which indicated that there is a significant difference between the perspectives of younger and older teachers towards using technology in their Arabic language instruction. The hypothesis is accepted which states: There are differences between the perspectives of younger and older Arabic language teachers towards using technology in Arabic language instruction, favoring younger teachers. In every dimension, the mean favored the younger teachers' indicating that; overall, they have more positive perspectives towards technology integration than older teachers.

Hypothesis H5: There are differences between the perspectives of teachers with different levels of education towards using technology in Arabic language instruction. An ANOVA test was utilized to test if there were differences between the perspectives of teachers with different levels of education towards using technology in Arabic language instruction according to their education. As shown in Table 15, the results of the ANOVA showed that there are no significant differences in Arabic language teachers' general perspectives towards using technology in Arabic language instruction according to education ( $F=0.963$ ,  $P$  value  $0.412$  which is more than  $0.05$ ). Therefore, we reject the hypothesis and accept the alternative hypothesis which states: There are no differences between the perspectives of teachers with different levels of education towards using technology in Arabic language instruction. These results agree with the findings of Gorder (2009) who also found no significant relationship between technology integration and a teacher's education level. While the two studies agree, other studies have found significant differences between education levels. Reasons for these disagreements are likely due to the vastly different demographics in the studies.

### **Implications of the Study**

The results of this study showed that technology usage in Arabic language instruction differs according to the experience of the teacher and that, overall, teachers maintain at least a positive perspective about technology in teaching. These results should please school leaders and educational decision-makers, as they show that there are overall positive perspectives towards technology.

While the study showed that the overall perspective of teachers towards technology integration is positive, there were still areas that revealed negative perspectives of teachers, and more importantly, perceptions of barriers to technology integration. These perceptions may play a large role in why some perspectives were negative for certain dimensions like student usage of computers in the classroom, and technology-related activities performed by students in the classroom.

The area that kept emerging as an area where teachers were expressing more negative perspectives towards technology was in the area of student using technology during class time. As mentioned in Chapter 2 of the literature review, this may be due to teachers' fear of losing status when computers and technology are used in the classroom because they feel as though the technology may replace them, or negatively impact their profession (Marcinkiewicz, 1993). To reference an example previously used in this study; in the United Arab Emirates, teachers are required to use technology in certain aspects of their teaching. However, many teachers expressed that they will find ways around using the said technology during their lessons because they fear that they lose importance when compared to the technology. Knowing this gives technology and education leaders the opportunity to educate teachers on how they can work *with* technology to reach their goals in the classroom, without one replacing the other. This education

may take place in the form of professional development, training sessions and academic educational opportunities (i.e. taking classes to understand how to effectively and successfully use technology in teaching strategies).

The mission of the United Arab Emirates is essentially to deliver a generation of “innovative, educated and skilled citizens” that will give back to their country (Farah & Ridge, 2011). For this to happen, educational instruction which integrates the right theories, frameworks and standard will be absolutely essential. At a national level, The United Arab Emirates has summarized its goals and objectives for education as:

Supporting students, schools and partners in the delivery of a world-class educational system by planning, implementing, and monitoring high quality educational standards, policies, programs, and guidelines. Students will graduate from the system with the requisite knowledge, skills and work ethic in preparation for higher education and the workforce. Students will also have technical, cultural, practical and personal skills and graduate from the system bilingual in Arabic and English (“Curriculum in the UAE”, par. 7).

Knowing and understanding how important technology and language are to The United Arab Emirates, this study almost immediately gains importance. The results of this study show how Arabic language teachers are using technology in their instruction, but more importantly their perspectives about the use of that technology. Discovering that there are overall positive perspectives towards the usage of technology helps schools and administration take the appropriate steps to continue to improve perspectives towards technology, and to address those areas where there seem to be negative perspectives. Some of the appropriate steps might be to

continuously expose teachers to educational developments and changes along with progress being made in the real world. This exposure can be in the form of knowledge transfers, which are brief presentations about new knowledge, skills and acumen to a group of peers and co-workers, brainstorming meetings where teachers come together to share their ideas on technology and classroom instruction, continuing education courses where teachers can learn about technology and new strategies to implement it into their teaching, etc. Further steps include authorities and practitioners in the field of education assigning special budgets to provide schools and teacher training centers with different technologies to help teachers become familiar with the benefits of using technology in their teaching, holding continuous in-service classes and providing suitable support and facilities so that teachers can maintain a positive view of technology. These steps are only a sample of the many that can help keep Arabic language teacher's perspectives positive, but also inspiring their role to change from an informational source to the facilitator of the learning process for their students, other teachers and those that are in the process of becoming teachers. It is important to train teachers along the continuum of the teaching life cycle, before and after.

This study can function as a starting point to clarify which strategies will be best to improve teachers' perspectives towards the usage of technology for certain dimensions, such as technology-related activities for students in the classroom. The strategies used to improve the perspectives of older teachers towards technology usage in the classroom will not be the same as the strategies used to improve the perspectives of teachers with very little teaching experience. According to Aphek (2014), the difference in strategies used to improve the perspectives of older and younger teachers differs for two main reasons. Firstly, new and beginning teachers generally have more experience with technology than older teachers, thereby alleviating the need for



intense instruction in the use of technology. However, the teachers with very little teaching experience will need professional development in how to implement and integrate technology lessons and learning in the classroom. Aphek (2014) highlights the need for differing professional development between older and younger teachers. She explains that the two groups have distinctively different cultures. For example, older teachers tend to be more focused, well-organized and dependent on paper. The teacher is usually the main source of information and authority in the classroom, which is the primary location where learning takes place. On the contrary, the younger teacher's is more open, and holds the view that there are many different sources of information, a majority of which are online and in cyberspace. In this culture, the teacher is not that sole source of information, but rather serves as a mentor and a guide to learning and information finding. Also, older teachers may need instruction on how to use the technology *as well as* implementing and integrating technology lessons in the classroom. This is supported by Aphek (2014) as she concedes that older teachers tend to be very uncomfortable using and manipulating technology when compared to younger teachers. She explains that not only are they uncomfortable using it, but that they may have a strong aversion to using technology in their teaching.

Taking into account these differences, it is not the job of educational institutions to rule the culture of older and younger teachers as “right” or “wrong”, but rather to support the positive aspects of both older and younger cultures that exist in teaching, and prepare to foster them in the most appropriate and effective way. Consequently, this will require different types of professional development.

Educators and academicians throughout the UAE should examine this study and reflect on the outcomes. Males (2011) states that teachers have the responsibility for what their students learn, and that the leaders of schools are accountable for how students perform. In order for the UAE to continue to progress according to its mission and vision, it must ensure that teachers are performing to the highest standards. As technology and language only grow in importance throughout the world, and especially in the UAE, the countries education system will have to rise to the occasion. This study can help propel the nation as a whole forward by giving them the information needed to turn negative perspectives towards technology usage in the classroom into positive ones by paying careful attention to the barriers that exist within teachers such as an inability to operate technology because of lack of skills or training, low motivation to use technology on the part of the teacher and low confidence in using technology in the classroom.

#### Recommendations for Stakeholders

As millions of dollars, dirhams and resources are being poured into technology integration across the United Arab Emirates, policy makers should examine data collected throughout this study to help them make useful, informed decisions on the funding choices for schools. Also, they should pay attention to the teacher-level barriers (inability to operate technology because of lack of skills or training, low motivation to use technology on the part of the teacher and low confidence in using the technology in the classroom), school-level barriers (underdeveloped technology infrastructure, low-quality hardware and software and limited access to resources), and system-level barriers (lack of support from school systems, especially as it relates to standardized tests) that were outlined in Chapter 2 of the literature review so they can be familiar with the types of barriers that are emerging between Arabic language instructors

and the nation's goal of integrating technology into teaching across the whole country. Useful and informed strategies can be formed from examining this study carefully, especially targeting those teachers who have negative perspectives towards certain dimensions of technology usage in the classroom such as technology-related activities performed by students in the classroom, student usage of computers and computer competency. Careful professional development is also another way to ensure that teachers learn how to use technology. However, solid professional development, both at the pre-and in-service stages, is not enough. Teachers expressed the need for strong support systems, and there is a plethora of research that agrees with these demands; there must be a strong support system for teachers undergoing this transformation. For example, Ertmer (1999) explains that inadequate support for teachers is directly tied to the barriers that prevent them from wanting to use technology in their teaching. Furthermore, Inan and Lowther (2010) found that school or district-wide administrative support has a key role in successful integration of technology into the classroom.

Teachers are held accountable for what their students learn, and school leaders are responsible for how students perform on examinations and standardized scores. To integrate technology successfully into classroom in the UAE (and everywhere), teachers need to become constructivist teachers. As Drenoyianni (2006) explains, this may mean a drastic change in how educators think about student learning. This “drastic change” is rooted in the teacher-centric versus student-centric approach to teaching that some educators take. In the teacher-centered approach, the classroom belongs solely to the teachers. Recognizing this, it is easy to see how teachers might be afraid of losing control of their classrooms to technology. On the other hand, a benefit of truly understanding teacher's fears and insecurities about integrating technology into

their teaching can help educational leaders develop strategies for instructing teachers on how to work *with* technology so they don't feel replaced or threatened.

### Recommendations for Future Research

Technology will continue to grow and evolve right along with education. In the future, there will continue to be the need for research about new strategies to implement technology into all areas of instruction. The importance of doing this successfully will only increase as we move forward. As such, after the study has been validated, the following areas are recommended for future research and study:

1. This study should be expanded into different languages so that it can be determined if these results hold true for just Arabic language instruction or language instruction as a whole. The results of this research can be used to help create stronger strategies for language teachers who teach a variety of languages.
2. Deeper analysis should be conducted to determine why teachers held more negative perspectives towards certain dimensions of technology, such as technology-related activities for students in the classroom. Emphasis should be put on the barriers to technology integration to see if there is a correlation between specific barriers and these dimensions.
3. It would be useful to replicate this study adding a different method of collection to see if the results were the same. One method that might be useful would be paper surveys. It may be possible that having the survey online may deter some teachers from responding accurately because they are intimidated by technology, etc.

4. It would be useful to replicate this study in another country that is not as technologically advanced or at the same socioeconomic level as the United Arab Emirates to see if these factors have a significant impact on the results of the study.
5. A detailed study should be conducted to determine what types of technology are best to integrate with Arabic language instruction. If successful technology integration is to occur, blanket strategies cannot be expected to be successful. Rather, each area of instruction should be examined to determine the best types of technology that can enhance student learning in that area. The way students will use technology to learn math may prove to be very different from the way they will use it to learn languages. This is an area that deserves more research.

## Summary

This quantitative, descriptive study examined Arabic language teachers' perspectives towards technology usage in their classrooms. The theoretical framework proposed that technology does in fact have a significant positive impact on student learning, and teachers' perspectives toward technology play an important role in their decision to use technology in their teaching. Barriers to technology integration were closely examined and revealed that first and second order barriers, such as school climate, insufficient hardware and software, lack of training and motivation, fear of being replaced by technology and intrinsic beliefs can also greatly affect technology integration. Arabic language teachers all across the United Arab Emirates were surveyed about their general perspective toward technology usage, as well as their use of technology in their current classroom instruction. An analysis of the data showed that older and more experienced teachers tend to have less positive perspectives about technology integration

than younger and less experienced teachers. Furthermore, it showed that females have more positive perspectives toward technology. Teachers from all levels of education had a positive perspective toward technology. Two of the main takeaways from this study are (1) In- and pre-service training should be used as a tool to help promote positive perspectives towards the integration of technology in the teaching of Arabic language among older and more experienced teachers; and (2) This training should focus on strategies to involve students in the use of computers in the classroom and technology-related activities performed by students in the classroom, as well as barriers that may be making it hard to achieve true technology integration into teaching such as lack of monetary resources in the UAE specifically in the areas of training and an unsupportive administration. This highlights the importance of including technology implementation-related training at the pre-service stage in addition to the in-service stage. It may even be worthwhile to include the educators of teachers, so that they also buy-in to the positive impacts that technology integration into teaching can have, and they can work to help educate future and present teachers.

Chapter 5 provided a detailed overview of the results of this study. Recommendations to leaders and teachers gave suggestions on how to use the results to help improve the negative perspectives that some teachers have towards technology usage in the classroom, as well as how to improve technology usage in classrooms as a whole.

## References

- Alhazmi, H., Najat-Aldeen, I., Almowaraay, M., & Jonaïd, B. (2010). The actuality of technology integration in education among schools of Medina District: Descriptive and analyzing study. Riyadh: King Saud University.
- Al-Khazraji, N. (2009). *The culture of commercialism: Globalization in the UAE*. Georgetown University. *ProQuest Dissertations and Theses*, 91. Retrieved from <http://search.proquest.com/docview/304882098?accountid=14556>.
- Al-Oteawi, S. M. (2002). The perceptions of administrators and teachers in utilizing information technology in instruction, administrative work, technology planning and staff development in Saudi Arabia (Doctoral Dissertation. Ohio University. 2002). UMI.
- Anderson, A., & Strother, S. (2011). *Teacher Digital Media Use Following an Online Professional Development Course*. Paper presented at the International Society of Technology Education Annual Meeting, Philadelphia, PA.
- Aphek, E. (2012). Clashing cultures: Why some teachers have difficulty using the new technologies. *Developing teachers*. Retrieved October, 17, 2013 from [http://www.developingteachers.com/articles\\_tchtraining/tchstech1\\_edna.htm](http://www.developingteachers.com/articles_tchtraining/tchstech1_edna.htm)
- Arabic.(n.d.). Retrieved December 30, 2012, from thefreedictionary.com website: <http://www.thefreedictionary.com/Arabic>
- Ash, K. (2011). Boosting literacy. *Education Week's Digital Directions*, 22-24.
- Balanskat, A., Blamire, R., & Kefala, S. (2006). *The ICT impact report: A review of*

- studies of ICT impact on schools in Europe*: European Schoolnet. Retrieved from [http://insight.eun.org/shared/data/pdf/impact\\_study.pdf](http://insight.eun.org/shared/data/pdf/impact_study.pdf)
- Batchelder, A., & Ridge, N. (2013). Dubai School of Government. *Al Qasimi Foundation for Policy Research*
- Bebell, D., Russell, M., & O'Dwyer, L. (2004). Measuring teachers' technology uses: why multiple-measures are more revealing. *Journal of Research on Technology in Education*, 37(1).
- Bennett, C. K. (1995). A staff development partnership for technology integration. *Journal of Staff Development*. 16(3), 19-22.
- Boysen, T. C. (1994). Technology: an educational toolbox. *THE Journal (Technological Horizons In Education)*, 21(11), 10-18.
- Bransford, J.D., Goin, L. I., Hasselbring, T.S., Kinzer, C. K., Sherwood, R. D., & Williams, S. M. (1986). Learning with technology: Theoretical and empirical perspectives. *Peabody Journal of Education*, 64(1), 5-26.
- Brenston, M. (2011). Worlds apart: women, men and technology. An exploration of the impact on women of the male technological world view. Center for Media Literacy. Retrieved December, 19, 2013 from <http://www.medialit.org/reading-room/worlds-apart-women-men-and-technology>
- Brickner, D. L. (1995). *The effects of first and second order barriers to change on the bridge and nature of computer usage of mathematics teachers: A case study* Doctor of Philosophy Dissertation, Purdue University Available from University of Kansas ProQuest Dissertations & Theses database.



- Brown, E. (2004). Overcoming the challenges of stand-alone multicultural courses: The possibilities of technology integration. *Journal of Technology and Teacher Education*, 12(4), 534-562.
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 30-45.
- Burns N, Grove SK (2005) *The Practice of Nursing Research: Conduct, Critique, and Utilization* (5th Ed.). St. Louis, Elsevier Saunders
- Carey, D. M., (1993). Teacher roles and technology integration: moving from teacher as director to teacher as facilitator. *Computers in the Schools*, 9(2-3), 106-118.
- Challenge based learning*. (2012). Retrieved from <https://www.challengebasedlearning.org/pages/welcome>
- Chen, C. (2008). Why do teachers not practice what they believe regarding technology integration? *The Journal of Educational Research*, 102(1), 65-75.
- Clark, C. M. & Peterson, P. L., (1986). Teachers' thought processes. In M. C. Wittrock *Handbook of research on teaching* (pp. 255-296). New York, NY: Macmillan.
- Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: development of a measure and initial test. *MIS Quarterly*, 19(2), 198-211.
- Corcoran, T. B. (1995). *Helping teachers teach well: Transforming professional development*. . (CPRE Research Briefs Series). New Brunswick, NJ: Consortium for Policy Research in Education.

- Cravens, T.R. (2011). *Effective technology strategies teachers use in the urban middle grades mathematics classroom. Middle-Secondary Education and Instructional Technology Dissertations*, 85.
- Davis, G. & Naumann, D. (1997). *Personal productivity with information technology*. New York, NY: McGraw-Hill.
- De Beuckelaer, A, & Lievens, F. (2009). Measurement equivalence of paper-and-pencil and Internet organisational surveys: A large scale examination in 16 countries. 109. *Applied Psychology*, 58(2), 336-361.
- Dias, L.B. (1999). Integrating technology—some things you should know. *Learning & Leading with Technology*, 27(3), 10-13, 21.
- Drenoyianni, H. (2006). Reconsidering change and ICT: Perspectives of a human and democratic education. *Education and Information Technologies*, 11(3), 401-413.
- Ertmer, P.A. (1999). Addressing first– and second-order barriers to change. Strategies for technology integration. *Educational Technology Research and Development*, 47(4), 47-61.
- Ertmer, P. A., & Hruskocy, C. (1999). Impacts of a university-elementary school partnership designed to support technology integration. *Educational Technology Research and Development*, 47(1), 81-96.
- Fabry, D. L., & Higgs, J. R. (1997). Barriers to the effective use of technology in education: Current status. *Journal of Educational Computing Research*, 17(4), 380-396.

- Farah, S., & Ridge, N. Dubai School of Government, (2009). *Challenges to curriculum development in the uae* 2(4), 1-2
- Flipped classroom*. (2013). Retrieved from <http://www.knewton.com/flipped-classroom>
- Funk, S. G., Champagne, M. T., Wiese, R. A., Tornquist, E. M. (1991a). Barriers to using research findings in practice: The clinicians perspective. *Applied Nursing Research*, Vol. 4, No. 2, pp. 90-95
- Gorder, L. (2009). Is technology integration finding its way into the classroom? *Journal for Computing Teachers*. Retrieved January, 3, 2014 from [http://www.iste.org/Content/NavigationMenu/Membership/SIGs/SIGCS\\_Computer\\_Science/\\_JCTJournalforComputingTeachers/PastIssues/2009/Spring/gorder\\_technology.pdf](http://www.iste.org/Content/NavigationMenu/Membership/SIGs/SIGCS_Computer_Science/_JCTJournalforComputingTeachers/PastIssues/2009/Spring/gorder_technology.pdf)
- Guhlin, M. (1996). Stage a well-desig ned study Saturday session and they will come! *Technology Connection*, 3(3), 13-14.
- Gregoire, R., & Laferriere, T. (2001). *Project-based learning collaborative learning with networked computers*. Retrieved May 20, 2008, from <http://www.tact.fse.ulaval.ca/ang/html/project.html>
- Hadley, M., & Sheingold, K. (1993). Commonalities and distinctive patterns in teachers' integration of computers. *American Journal of Education* 101(3), 261-315.
- Hamdan, S. (2013, 03 17). U.A.E. makes huge investment in education and technology. *New york times*. Retrieved from [http://www.nytimes.com/2013/03/18/world/middleeast/uae-makes-huge-investment-in-education-and-technology.html?\\_r=1&](http://www.nytimes.com/2013/03/18/world/middleeast/uae-makes-huge-investment-in-education-and-technology.html?_r=1&)
- Harris, P., & Sullivan, M. F. (2000). *Using technology to create a new paradigm for a learner-centered educational experience*. (Technos: Quarterly for Educational and Technology).

Retrieved from

[http://findarticles.com/p/articles/mi\\_m0HKV/is\\_2\\_9/ai\\_65014465/?tag=content;col11](http://findarticles.com/p/articles/mi_m0HKV/is_2_9/ai_65014465/?tag=content;col11)

Heitin, L. (2013). For teachers, wired classrooms pose new management concerns. *Education Week Teacher*. Retrieved January, 4, 2014 from [http://www.edweek.org/tm/articles/2013/10/14/cm\\_wired.html](http://www.edweek.org/tm/articles/2013/10/14/cm_wired.html)

Hendren., K. (2000). The effect of first and second order barriers on the ideal and actual integration of computer technology into the high school science classroom, *Unpublished Ph.D., Georgia State University, Atlanta, GA*.

Hodas, S. (1993). Technology refusal and the organizational culture of schools. *Education Policy Analysis Archives*, 1(10), 1-23.

Huang, H. -J. (2006). Promoting multicultural awareness through electronic communication. *International Electronic Journal For Leadership in Learning*, 10(7). Retrieved from <http://www.ucalgary.ca/iejll/vol10/huang>

Inan, F. A. & Lowther, D. L. (2010). Factors affecting technology integration in K-12 classrooms: A path model. *Educational Technology Research and Development*, 58(2), 137-154.

Joshi, H. (2012). Towards transformed teaching: Engaging learners anytime, anywhere. UAE Journal of Education Technology and Learning v3, 3-5.

KAZU, İ. Y. (2011). An investigation of factors affecting the use of educational technology in turkish primary schools. *Education*, 131(3), 510-524

Kearsley, G., & Lynch, W. (1992). Educational leadership in the age of technology: The new skills. *Journal of Research on Computing in Education*, 25(1), 50-60.

- Keengwe, J., Onchwari, G., & Wachira, P. (2008). Computer technology integration and student learning: Barriers and promise. *Journal of Science Education and Technology*, 17(6), 560-565.
- Lee, H. (2001). *Teachers' perceptions of technology: Four categories of concerns*. Atlanta, GA: Annual Proceedings of Selected Research and Development and Practice Papers, Presented at the National Convention of the Association for Educational Communications and Technology.
- Lee, J. F., & VanPatten, B. (2003). *Making communicative language teaching happen*. NY: McGraw-Hill
- Lei, J., & Morrow, B. (2009). Teachers' adoption of technology innovation into pedagogical practices *Educational and Information Technologies* 15(3), 142-155.
- Lucas, H. (1999). *Information technology and the productivity paradox*. New York, NY: Oxford University Press.
- Males, N.E. (2011) *Uses and perspectives toward educational technology among new teachers in urban schools: A correlational study*. University of Phoenix. *ProQuest Dissertations and Theses*. Retrieved from <http://search.proquest.com/docview/3468109?accountid=14556>
- Marcinkiewicz, H. R. (1993). Computers and teachers: Factors influencing computer use in the classroom. *Journal of Research on Computing in Education*, 26(2), 220-237.

- Marshall, P.L. (2001). Multicultural education and technology: Perfect pair or odd couple. Washington, DC: Eric Clearinghouse on Teaching and Teacher Education. (ERIC Document Reproduction Service No. ED460129)
- McEneaney, J. E. (2000). Learning on the web: A content literacy perspective. Retrieved July 18, 2008, from [http://www.readingonline.org/articles/art\\_index.asp?HREF=/articles/mcneaney/index.htm](http://www.readingonline.org/articles/art_index.asp?HREF=/articles/mcneaney/index.htm)
- McFarlane, T. A., Green, K. E., & Hoffman, E. R. (1997). *Teachers' perspectives toward technology: Psychometric evaluation of the technology attitude survey*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL. Retrieved from <http://www.eric.ed.gov/PDFS/ED411279.pdf>
- Means, B., Blando, J., Olson, K., Middleton, T., Morocco, C. C., Remz, A. R., & Zorfass, J. (1993). *Using technology to support education reform*. Washington, DC: U.S. Government Printing Office. Retrieved from <http://www2.ed.gov/pubs/EdReformsStudies/TechReforms/chap6b.html>
- Merriam-Webster Dictionary* (2014). Retrieved March 30, 2014 from <http://www.merriam-webster.com/dictionary/perspective>
- Mills, S. C. (1999). Integrating computer technology in classrooms: Teacher concerns when implementing an integrated learning system. In J. Price et al. (Eds.), *Proceedings of society for information technology & teacher education international conference 1999* (pp.1429-1434). Chesapeake, VA: AACE.
- Moersch, C. (1995). Levels of technology implementation (LoTi): A framework for measuring classroom technology use. *Learning & Leading with Technology*, 23(3), 40-42.

- National Business Education Alliance. (2006). About LoTi. Retrieved from <http://loticonnection.com/lotilevels.html>
- Neuman, L.W. (2006). *Social research methods: Qualitative and quantitative approaches*. (6th ed.). Boston, MA: Pearson Education, Inc.
- Niederhauser, D.S., & Pkermen, S. (2009). *Measuring pre-service teachers' Instructional Technology Outcome Expectations*, *Computers in Human Behavior*, 26, 436-442
- Orlich, D. C. (1983). Some considerations for effective in-service education. *The Clearing House*, 56(5), 197-205.
- perspective. (n.d.). *Merriam-Webster Dictionary*. Retrieved March 31, 2014, from Dictionary.com website: <http://www.merriam-webster.com/dictionary/perspective>
- Petras, C.M. (2010) *A descriptive study of science and mathematics teachers' pedagogy, ICT use and perceptions of how ICT impacts their teaching*. University of Pepperdine. *ProQuest Dissertations and Theses*. Retrieved from <http://search.proquest.com/docview/3404309?accountid=14556>
- Polit, D., & Hungler, B. (2003). *Research: Principles and methods*. (6th ed.). New York: NY: Reynolds, K. E., & Barba, R. H. (1996). *Technology for the Teaching and Learning of Science*. Boston: Allyn and Bacon.
- Richey, R.C. (2008). Reflections on the 2008 AECT definitions of the field. *TechTrends*, 52(1) 24-25
- Roblyer, M.D. (1997). Predictions and realities: the impact of the Internet on K-12 education. *Learning and Leading with Technology*, 1(25), 54-56.

- Salkind, N. J. (2009). *Exploring Research* (7th ed.). Upper Saddle River, NJ: Pearson Education.
- Samak, Z. A. (2006). An exploration of Jordanian English language teachers' perspectives, skills and access as indicator of information and communication technology integration in Jordan. Unpublished Doctoral Thesis. Florida State University.
- Scheffler, F.L., & Logan, J. P. (1999). Computer technology in schools: What teachers should know and be able to do. *Journal of Research on Computing in Education*, 31(3), 305-326.
- Schoepp, K. W. (2004). *Technology integration barriers in a technology-rich environment: A CBAM perspective*. Master of Arts Thesis, University of Calgary ProQuest Dissertations & Theses database.
- Sernak, K., & Wolfe, C. (1998). Creating multicultural understanding and community in preservice education classes via email. *Journal of Technology and Teacher Education*, 6(4), 303-329.
- Snoeyink, R., & Ertmer, P. A. (2001). Thrust into technology: How veteran teachers respond. *Educational Technology Systems*, 30(1), 84-112.
- Stieger, S., Reips, U., & Voracek, M. (2007). Forced-response in online surveys: bias from reactance and an increase in sex-specific dropout. *Journal of the American Society for Information Science & Technology*, 58(11), 1653-1660.
- technology. (n.d.). *Dictionary.com Unabridged*. Retrieved December 08, 2012, from Dictionary.com website: <http://dictionary.reference.com/browse/technology>
- The United Arab Emirates. (2011). The Ministry of Education. *Curriculum in the UAE*.



- UAE educators look to embed technology and mobile learning in classrooms at curriculum conference. (2012, Nov 22). *Middle East Company News*. Retrieved from <http://search.proquest.com/docview/1179605965?accountid=14556>
- U.S. Congress, Office of Technology Assessment. (1995). *Teachers and technology: Making the connection*, OTA-HER-616. Washington, DC: U.S. Government Printing Office.
- Zakaria, Z. (2001). Factors Related to Information Technology Implementation in the Malaysian Ministry of Education Polytechnics. (Doctoral Dissertation. The Virginia Polytechnic Institute and State University).

## Appendix (A): Human Subjects Committee Approval



3/25/2013  
HSCL #20743

Khadija Alhumaid  
United Arab Emirates  
RAS ALKHAIMA, ALZAWAZAT St.

The Human Subjects Committee Lawrence Campus (HSCL) has received your response to its expedited review of your research project

20743 Alhumaid/Gonzalez-Bueno (EDU) Attitudes of Arabic Teachers in United Arab Emirates towards the Usage of Technology in their Teachings

and approved this project under the expedited procedure provided in 45 CFR 46.110 (f) (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. As described, the project complies with all the requirements and policies established by the University for protection of human subjects in research. Unless renewed, approval lapses one year after approval date.

The Office for Human Research Protections requires that your consent form must include the note of HSCL approval and expiration date, which has been entered on the consent form(s) sent back to you with this approval.

1. At designated intervals until the project is completed, a Project Status Report must be returned to the HSCL office.
2. Any significant change in the experimental procedure as described should be reviewed by this Committee prior to altering the project.
3. Notify HSCL about any new investigators not named in original application. Note that new investigators must take the online tutorial at [https://rgs.drupal.ku.edu/human\\_subjects\\_compliance\\_training](https://rgs.drupal.ku.edu/human_subjects_compliance_training).
4. Any injury to a subject because of the research procedure must be reported to the Committee immediately.
5. When signed consent documents are required, the primary investigator must retain the signed consent documents for at least three years past completion of the research activity. If you use a signed consent form, provide a copy of the consent form to subjects at the time of consent.
6. If this is a funded project, keep a copy of this approval letter with your proposal/grant file.

Please inform HSCL when this project is terminated. You must also provide HSCL with an annual status report to maintain HSCL approval. Unless renewed, approval lapses one year after approval date. If your project receives funding which requests an annual update approval, you must request this from HSCL one month prior to the annual update. Thanks for your cooperation. If you have any questions, please contact me.

Sincerely,

Christopher Griffith, J.D.  
Assistant Coordinator  
Human Subjects Committee- Lawrence

cc: Manuela Gonzalez-Bueno

Human Subjects Committee Lawrence  
Youngberg Hall | 2385 Irving Hill Road | Lawrence, KS 66045 | (785) 864-7429 | [HSCL@ku.edu](mailto:HSCL@ku.edu) | [research.ku.edu](http://research.ku.edu)

## Appendix (B): Subject Consent Form

Approved by the Human Subjects Committee University of  
Kansas, Lawrence Campus (HSCL). Approval expires one  
year from 3/25/2013 HSCL # 20743

### Internet Information Statement

The Department of Curriculum and Teaching at the University of Kansas supports the practice of protection for human subjects participating in research. The following information is provided for you to decide whether you wish to participate in the present study. You should be aware that even if you agree to participate, you are free to withdraw at any time without penalty.

The purpose of this study is to explore the attitudes of Arabic language teachers in The United Arab Emirates towards the usage of technology in their classrooms. This will entail your completion of a questionnaire. The questionnaire packet is expected to take 25 minutes to complete. The content of the questionnaire should cause you no more discomfort than you would experience in your everyday life. Although participation may not benefit you directly, we believe that the information obtained from this study will help us gain a better understanding of Arabic language teachers' attitudes toward the usage of technology in classroom. Your name will not be associated in any way with the research findings. It is possible, however, with internet communications, that through intent or accident someone other than the intended recipient may see your response.

If you would like additional information concerning this study before or after it is completed, please feel free to contact us by phone or mail. Completion of the study indicates your willingness to participate in this study and that you are at least 18 years old. If you have any additional questions about your rights as a research participant, you may call (785) 864-7429 or write the Human Subjects Committee Lawrence Campus (HSCL), University of Kansas, 2385 Irving Hill Road, Lawrence, Kansas 66045-7563, email [irb@ku.edu](mailto:irb@ku.edu).

Sincerely,

Khadijah Al-humaid  
Student Researcher  
Curriculum & Teaching  
University of Kansas  
Lawrence, KS 66045  
(785) 727-0093  
[alhumaid@ku.edu](mailto:alhumaid@ku.edu)

Dr. Gonzalez, Manuela  
Associate Professor  
Curriculum & Teaching  
University of Kansas  
Lawrence, KS 66045  
(785) 864-9674  
[mgbueno@ku.edu](mailto:mgbueno@ku.edu)

## Appendix (C): LoTi Demographic Survey

### Demographic Questions: For Teachers and Administrators

1. Which category best describes your primary subject/specialty?
2. Which category best describes your primary grade level?
3. How many years of experience do you have in education?
4. Do you feel like technology is relevant to your instructional setting?
5. How many computers do you have for instructional use in your classroom?
6. Do you have an internet connection in your classroom?
7. Approximately how often do you use computers to do your job as an educator?
8. How many hours of technology-related training have you received over the past five years?
9. Which statement best describes the content of your technology-related training?
10. From which individual(s) do you mostly seek primary guidance, information, inspiration, and/or direction relating to the integration of technology in your instructional setting?
11. What do you perceive as your greatest obstacle to further using technology in your instructional setting?
12. Do you participate in formal or informal technology sharing sessions, such as faculty meetings, in-service training, lunchtime discussions, before or after school meetings, or common preparation time within your instructional setting?
13. Have you successfully completed a specific technology training program over the past five years (e.g., In-Tech Training, Georgia Learning Connection Training, ELITE Training, WebTech Training, INTEL Training, WebQuest Training)?

14. What is your age group?
15. Approximately how often do students use computers in your instructional setting?
16. How many national, regional, or local technology conferences have you attended over the past five years?

Read each response and assign a score based on the following scale:

0 = N/A

1-2 = Not true of me now

3-5 = Somewhat true of me know

6-7 = Very true of me know

1. I use the classroom technology resources exclusively to take attendance, record grades, present content to students, and/or communicate with parents via email.
2. My students use the Internet for (1) collaboration with others, (2) publishing, (3) communication, and (4) research to solve issues and problems of personal interest that address specific content standards.
3. My students have immediate access to all forms of the most advanced and complete technology infrastructure available that they use to pursue problem-solving opportunities surrounding issues of personal and/or social importance.
4. I am skilled in merging the classroom technology resources with relevant and challenging, student-directed learning experiences that address the content standards.
5. My students participate in online collaborative projects (not including email exchanges) with other students, government agencies, or business professionals to solve their self-selected problems or issues.
6. My students frequently discover innovative ways to use our school's advanced learning technologies to make a real difference in their lives, in their school, and in their community.
7. My students frequently use the classroom technology resources for research purposes that require them to investigate an issue/problem, think creatively, take a position, make decisions, and/ or seek out a solution.

8. The types of professional development offered through our school system does not satisfy my need for more engaging and relevant experiences for my students that take full advantage of both my "technology" expertise and personal interest in developing learner-based curriculum units.
9. My students use the classroom technology resources most frequently to improve their basic math and literacy skills via practice testing software, integrated learning systems (ILS), or tutorial programs.
10. I regularly implement a student-centered approach to teaching that takes advantage of our classroom technology resources to engage students in their own learning.
11. Students in my classroom design either web-based or multimedia presentations to showcase their research (e.g., information gathering) on topics that I assign in class.
12. My current instructional program is effective without the use of technology; therefore, I have no current plans to change it to include any technology resources.
13. Having students apply what they have learned in my classroom to the world they live in is a cornerstone to my approach to instruction and assessment.
14. My students' creative thinking and authentic problem-solving opportunities are supported by the most advanced and complete technology infrastructure available.
15. I have an immediate need for some outside help with designing student-centered performance assessments using the available technology that involve students applying what they have learned to make a difference in their school/community.
16. Curriculum demands, scheduling, and/or budget constraints at our school have prevented me from using any of the available technology resources during the instructional day.

17. Given my current curriculum demands and class size, it is much easier and more practical for my students to learn about and use computers and related technology resources outside of my classroom (e.g., computer lab, resource center).
18. Students' use of information and inquiry skills to solve problems of personal relevance guides the types of instructional materials used in and out of my classroom.
19. Students taking meaningful action at school or in the community relating to the content standards learned in class are an essential part of my approach to using the classroom technology resources.
20. I am comfortable training others in using basic software applications, browsing/searching the Internet, and using specialized technologies unique to my grade level or content area.
21. It is easy for me to identify and implement software applications, peripherals, and web-based resources that support student's complex thinking skills and promote self-directed problem solving.
22. Though I currently use a student-centered approach when creating instructional units, it is still difficult for me to design these units on my own to take full advantage of our classroom technology resources.
23. I have trouble managing a student-centered classroom using the available technology resources and would welcome the help of a peer coach or mentor.
24. I frequently consider (1) my students' interests, experiences, and desire to solve relevant problems and (2) the available human resources outside of the school when planning student-centered learning activities that include technology.



25. I frequently present information to students using multimedia presentations or electronic "slideshows" to reinforce the content standards that I am teaching and better prepare students for standardized testing.
26. I can solve most technical problems with our classroom's technology resources during the instructional day without calling for technical assistance.
27. I frequently engage students in learning activities that require them to analyze information, think creatively, make predictions, and/or draw conclusions using the classroom technology resources.
28. I consistently provide alternative assessment opportunities that encourage students to "showcase" their understanding of the content standards in nontraditional ways.
29. My personal professional development involves investigating and implementing the newest innovations in instructional design and learning technologies that take full advantage of my schools most current and complete technology infrastructure.
30. Constant technical problems prevent me and/or my students from using the classroom technology resources during the instructional day.
31. I frequently assign web-based projects to my students as a means of emphasizing specific complex thinking skill strategies aligned to the content standards.
32. Locating quality software programs, websites, or CD's to supplement my curriculum and reinforce specific content standards is a priority of mine at this time.
33. I can locate and implement instructional units that emphasize students using the classroom technology resources to solve "real-world" problems or issues, but I don't usually create them myself.

34. My students identify important school/community issues or problems, then use multiple technology resources as well as human resources beyond the school building (e.g., partnerships with business professionals, community groups) to solve them.
35. My students collaborate with me in setting both group and individual academic goals that provide opportunities for them to direct their own learning aligned to the content standards.
36. I use our technology resources daily to access the Internet, send email, and/or plan classroom activities.
37. I have an immediate need for professional development opportunities that place greater emphasis on using my classroom technology resources with challenging and differentiated learning experiences rather than using specific software applications to support my current lesson plans.
38. I need access to more resources and/or training to begin using the available technology resources as part of my instructional day.
39. Computers and related technology resources in my classroom are not used during the instructional day, nor are there any plans to include them at this time.
40. Though I may use technology for teacher preparation, I am not comfortable using my classroom technology resources as part of my instructional day.
41. My students create their own web pages or multimedia presentations to showcase what they have learned in class rather than preparing traditional reports.
42. Due to time constraints and/or lack of experience, I seek assistance from my colleagues to ensure that my instructional units merge complex thinking skills and student technology use with "real world" projects.

43. I regularly use different technology resources for personal or professional communication and planning.
44. My immediate professional development need is to learn how my students can use our classroom technology resources to achieve specific outcomes aligned to the content standards.
45. Using the most current and complete technology infrastructure available, I have maximized the use of the learning technologies in my classroom and at my school.
46. I use the classroom technology resources most frequently to locate lesson plans I can use in class that are appropriate to my grade level and are aligned with our content standards.
47. My instructional use of our classroom technology resources is frequently altered according to the latest innovations and research in the areas of instructional technology, teaching strategies, and/or learning theory.
48. Problem-based learning is common in my classroom because it allows students to use the classroom technology resources as a tool for higher-order thinking and personal inquiry.
49. I am proficient with basic software applications such as word processing tools, internet browsers, spreadsheet programs, and multimedia presentations.
50. Students' questions and previous experiences heavily influence the content that I teach as well as how I design learning activities for my students.

## Appendix (C2): LoTi Questionnaire for Building Administrators

Read each response and assign a score based on the following scale:

1 = N/A

1-3 = Not true of me now

3-5 = Somewhat true of me know

6-7 = Very true of me know

1. I frequently encourage my staff to engage students in learning activities that require them to analyze information, think creatively, make predictions, and/or draw conclusions using the classroom technology resources.
2. I encourage my staff to present information to students using multimedia presentations or electronic "slideshows" to reinforce the content standards that are being taught and better prepare students for standardized testing.
3. My staff has trouble managing student centered classrooms using the available technology resources so I provide staff development opportunities for them to work with peer coaches or mentors.
4. I support students designing either web-based or multimedia presentations to showcase their research (e.g., information gathering) on any instructor-assigned topic.
5. I encourage my staff to assign students web-based projects that emphasize specific complex thinking skill strategies aligned to the content standards.
6. I support students collaborating with their teachers to set both group and individual academic goals that provide opportunities for them to direct their own learning aligned to the content standards.
7. Using the most current and complete technology infrastructure available, I have personally helped my staff maximize their use of the learning technologies at my school.

8. Problem-based learning is supported and nurtured at my school because it allows students to use the classroom technology resources as a tool for higher-order thinking and personal inquiry.
9. My current priority is for staff to use the classroom technology resources to take attendance, record grades, present content to students, and/or communicate with parents via email.
10. I support students identifying important school/community issues or problems, then using multiple technology resources as well as human resources beyond the school building (e.g., partnerships with business professionals, community groups) to solve them.
11. I support students using the classroom technology resources most frequently to improve their basic math and literacy skills via practice testing software, integrated learning systems (ILS), or tutorial programs.
12. Constant technical problems at our school prevent staff members from using the classroom technology resources during the instructional day.
13. I am proficient with basic software applications such as word processing tools, internet browsers, spreadsheet programs, and multimedia presentations.
14. I expect my staff to let their students discover innovative ways to use our school's advanced learning technologies to make a real difference in their lives, at their school, and in their community.
15. I have an immediate need for some outside help with designing student-centered performance assessments using the available technology that involve students applying what they have learned to make a difference in their school/community.

16. I recommend that teachers at my school locate quality software programs, websites, or CD's to supplement their curriculum and reinforce specific content standards.
17. As a minimum, I expect my staff to use the classroom technology resources for teacher preparation because most of them do not seem comfortable using these resources with students as part of their instructional day.
18. I am comfortable training others in using basic software applications, browsing/searching the Internet, and using specialized technologies unique to their grade level or content area.
19. Computers and related technology resources at our school are not used during the instructional day, nor are there any plans to include them at this time.
20. I expect my staff to provide alternative assessment opportunities that encourage students to "showcase" their understanding of the content standards in nontraditional ways.
21. I encourage my staff to engage students in Internet use for (1) collaboration with others, (2) publishing, (3) communication, and (4) research to solve issues and problems of personal interest that address specific content standards.
22. I support my staff encouraging their students to participate in online collaborative projects (not including email exchanges) with other students, government agencies, or business professionals to solve their self-selected problems or issues.
23. It is much easier and more practical for students to learn about and use computers and related technology resources in a specialized instructional setting (e.g., computer lab, resource center) rather than in the classroom.

24. My expectation is that teachers use the classroom technology resources primarily to locate lesson plans they can use in class that are appropriate to their grade level and are aligned with our content standards.
25. My staff's current instructional program is effective without the use of technology; therefore, I have no current plans to change it to include any technology resources.
26. I use our technology resources daily to access the Internet, send email, and/or plan staff development opportunities.
27. Due to time constraints and/or lack of experience, I encourage my staff to seek assistance from either myself or their colleagues to ensure that their instructional units merge complex thinking skills and student technology use with "real world" projects.
28. Students' creative thinking and authentic problem-solving opportunities are supported at my school by the most advanced and complete technology infrastructure available.
29. My personal professional development involves providing the newest innovations in instructional design and learning technologies for my staff that take full advantage of our schools most current and complete technology infrastructure.
30. Most of my staff can locate and implement instructional units that emphasize students using the classroom technology resources to solve "real-world" problems or issues, but I seldom see them create these units from scratch.
31. I seek student-centered professional development opportunities for my staff that will aid them in letting students apply what they have learned to make a real difference in their school/community using the available technology.
32. Students' use of information and inquiry skills to solve problems of personal relevance should guide the types of instructional materials used in and out of the classroom.

33. I encourage my staff frequently to alter their use of classroom technology resources according to the latest innovations and research in the areas of instructional technology, teaching strategies, and/or learning theory.
34. I provide opportunities for my staff to design and implement a student-centered approach to teaching that takes advantage of the classroom technology resources to engage students in their own learning.
35. I encourage my staff frequently to consider (1) their students' interests, experiences, and desire to solve relevant problems and (2) the available human resources outside of the school when planning student-centered learning activities that include technology.
36. Students taking meaningful action at school or in the community relating to the content standards learned in class is an essential part of my staff's approach to using classroom technology resources.
37. My staff needs professional development opportunities that place greater emphasis on using their classroom technology resources with challenging and differentiated learning experiences rather than using specific software applications to support their current lesson plans.
38. I encourage instructional practices that allow students to create their own web pages or multimedia presentations to showcase what they have learned in class rather than preparing traditional reports.
39. My staff needs more professional development opportunities that take full advantage of both their "technology" expertise and personal interest in developing learner-based curriculum units.



40. It is my expectation that students use the classroom technology resources for research purposes that require them to investigate an issue/problem, think creatively, take a position, make decisions, and/ or seek out a solution.
41. Having students apply what they have learned in the classroom to the world they live in is a cornerstone to my philosophy about instruction and assessment.
42. Curriculum demands, scheduling, and/or budget constraints at our school have prevented me from supporting the use of technology resources during the instructional day.
43. I actively support staff merging classroom technology resources with relevant and challenging, student-directed learning experiences that address our content standards.
44. Though I actively encourage my staff to use a student-centered approach when creating instructional units, it is still difficult for them to design units that take full advantage of the available classroom technology resources on their own.
45. My immediate staff development priority is to show staff how students can use the classroom technology resources to achieve specific outcomes aligned to the content standards.
46. My staff has proven they can easily identify and implement software applications, peripherals, and web-based resources that support student's complex thinking skills and promote self-directed problem solving.
47. Students at my school have immediate access to all forms of the most advanced and complete technology infrastructure available that they use to pursue problem-solving opportunities surrounding issues of personal and/or social importance.
48. Our district does not provide adequate training or support for my staff to use the available technology resources as part of their instructional day.

49. I regularly use different technology resources for personal or professional communication and planning.
50. Students' questions and previous experiences should heavily influence the content taught in the classroom as well as how learning activities are designed for students.

## Appendix (D): Teacher Technology Use and Attitude Survey (USEIT)

### Directions:

Your school has been selected to participate in a statewide study of educational technology. This survey asks questions about your use of computers both in and outside of school, as well as questions about your perspective toward technology.

In this survey, we use the term “technology” to refer to computers or computer-related devices such as LCD projectors, Palm Pilots, AlphaSmarts® (portable keyboarding device), SmartBoards®, student response systems, etc.

Use only a No. 2 pencil.

Make solid marks that fill in the response completely.

Erase cleanly any marks you wish to change.

1. How many years have you taught at your current school?

☐ Less than 1 year

☐ 1 – 2 years

☐ 3 – 5 years

☐ 6-10 years

☐ 11-15 years

☐ More than 15 years

2. How many years have you taught throughout your career?

☐ Less than 1 year

☐ 1 – 2 years

☐ 3 – 5 years

☐ 6-10 years

☐ 11-15 years

☐ More than 15 years

3. What is your gender?

☐ Male

☐ Female

4. Please mark the appropriate range for your age

☐ 20 – 30

☐ 31-40

☐ 41-50

☐ 51-60

☐ 61 +

6. How often do you use each of the following devices in your classroom?

Never

Less than once per week

Once per week

3 times a week

Daily

LCD projector/Computer Projection System O O O O O

TV monitor/VCR O O O O O

Scanner O O O O O

Digital Camera O O O O O

Overhead Projector O O O O O

SmartBoard® O O O O O

7. During class time, how often did students perform the following activities this year?

Never

Once or twice a year

Several times a year

Several times a month

Several times a week

Students work individually on school work without using computers. O O O O O

Students work individually on school work using computers. O O O O O

Students work in groups on school work without using computers O O O O O

Students work in groups on school work using computers. O O O O O

Students perform research or find information without using a computer. O O O O O

Students perform research or find information using the internet or CD-ROM O O O O O

Students use a computer or portable writing device for writing O O O O O

Students use a computer to solve problems. O O O O O

Students learn keyboarding skills. O O O O O

Students use a computer to play educational games. O O O O O

Students use a computer to play games for fun. O O O O O

Students present information to the class without using a computer. O O O O O

Students present information to the class using a computer. O O O O O

Students use a spreadsheet/database to record, explore or analyze data. O O O O O

Students use probes (e.g., thermometers, etc.) attached to a computer. O O O O O

Students use e-mail to consult with "experts". O O O O O

Students use computers to communicate with students in other schools. O O O O O

Students do a project or paper using a computer outside of class time. O O O O O

8. How often did YOU perform the following?

Never

Once or twice a year

Several times a year

Several times a month  
Several times a week

Use a computer to deliver instruction to your class. ☐ ☐ ☐ ☐ ☐  
Record student grades using a computer. ☐ ☐ ☐ ☐ ☐  
Prepare or maintain IEPs using a computer. ☐ ☐ ☐ ☐ ☐  
Adapt an activity to students' individual needs using computers. ☐ ☐ ☐ ☐ ☐  
Make handouts for students using a computer ☐ ☐ ☐ ☐ ☐  
Create a test, quiz or assignment using a computer. ☐ ☐ ☐ ☐ ☐  
Perform research and lesson planning using the internet. ☐ ☐ ☐ ☐ ☐  
E-mail to teachers in your school. ☐ ☐ ☐ ☐ ☐  
E-mail communication with school and district administration. ☐ ☐ ☐ ☐ ☐  
E-mail to students' parents. ☐ ☐ ☐ ☐ ☐  
Create and maintain web pages. ☐ ☐ ☐ ☐ ☐

9. How often do you ask students to produce the following using technology?

Never  
Once or twice a year  
Several times a year  
Several times a month  
Several times a week

Reports and term papers ☐ ☐ ☐ ☐ ☐  
Multimedia projects ☐ ☐ ☐ ☐ ☐  
Web pages, web sites or other web-based publications ☐ ☐ ☐ ☐ ☐  
Pictures or art work ☐ ☐ ☐ ☐ ☐  
Stories or books ☐ ☐ ☐ ☐ ☐  
Graphs or charts ☐ ☐ ☐ ☐ ☐  
Videos or movies ☐ ☐ ☐ ☐ ☐

10. For how many years have you had:

Never  
1 year  
2-3 years  
5-6 years  
7+ years  
A computer in your classroom? ☐ ☐ ☐ ☐ ☐  
An internet connection in your classroom? ☐ ☐ ☐ ☐ ☐  
A computer at home? ☐ ☐ ☐ ☐ ☐  
An internet connection in your home? ☐ ☐ ☐ ☐ ☐

11. How many years ago did you first use computers in the following ways?

Require students to complete assignments using a computer ☐ ☐ ☐ ☐ ☐  
For your own work: grading, handouts, transparencies, etc. ☐ ☐ ☐ ☐ ☐  
For other activities: personal e-mail, word processing, web-surfing ☐ ☐ ☐ ☐ ☐

For instructional purposes in your classroom O O O O O

## Appendix (E): Teacher Attitude Survey

Please answer the following questions as honestly and as accurately as possible.

1. Do you have a computer at home?

- a) Yes
- b) No

2. Do you have Internet access at home?

- a) Yes, I have dial-up.
- b) Yes, I have broadband/High-speed Internet.
- c) I don't know.
- d) No, I don't have Internet access.

3. How many years have you worked in education?

- a) 1-5 years
- b) 6-10 years
- c) 11-15 years
- d) 16-20 years
- e) 21 or more years

4. Approximately how often do you use word processing programs? (Microsoft Word, etc.)

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

5. Approximately how often do you use spreadsheets? (Microsoft Excel, etc.)

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

6. Approximately how often do you use Google Docs?

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

7. Approximately how often do you use mind-mapping tools? (Inspiration, Kidspiration, etc.)

- a) Daily

- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

8. Approximately how often do you use presentation software? (Microsoft PowerPoint, etc.)

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

9. Approximately how often do you use the Internet?

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

10. Approximately how often do you use modeling and simulation programs? (ExploreLearning Gizmos, Excelets, Scratch, etc.)

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

11. Approximately how often do you use drill/practice programs? (Study Island, Quia, etc.)

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

12. Approximately how often do you use Discovery Education Streaming?

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

13. Approximately how often do you use interactive whiteboard software? (Promethean ActivInspire, SMART Notebook, etc.)

- a) Daily
- b) Weekly



- c) Monthly
- d) 1-2 times per year
- e) Never

14. Approximately how often do you use assistive technology?

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

15. Approximately how often do you use PowerSchool?

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

16. Approximately how often do you use Web 2.0 tools (Blogs, Wikis, etc.)

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

17. Approximately how often do you use email?

- a) Daily
- b) Weekly
- c) Monthly
- d) 1-2 times per year
- e) Never

18. How comfortable are you with using word processing programs? (Microsoft Word, etc.)

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

19. How comfortable are you with using spreadsheets? (Microsoft Excel, etc.)

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

20. How comfortable are you with using presentation software? (Microsoft PowerPoint, etc.)

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

21. How comfortable are you with using the Internet?

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

22. How comfortable are you with using modeling and simulation programs? (ExploreLearning Gizmos, Excelets, Scratch, etc.)

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

23. How comfortable are you with using Discovery Education Streaming?

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

24. How comfortable are you with using interactive whiteboard software? (Promethean ActivInspire, SMART Notebook, etc.)

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

25. How comfortable are you with using assistive technology?

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

26. How comfortable are you with using PowerSchool?

- a) Very comfortable
- b) Moderately comfortable
- c) Not comfortable
- d) No experience

27. How comfortable are you with using email?

- a) Very comfortable

- b) Moderately comfortable
- c) Not comfortable
- d) No experience

28. Have you received technology staff development during the past school year (09-10)?

- a) Yes
- b) No

29. How helpful did you find the training?

- a) Very helpful
- b) Somewhat helpful
- c) Not helpful
- d) N/A

30. What do you perceive as your greatest obstacle to further using technology in your instructional setting?

- a) Time to learn, practice, plan
- b) Access to technology
- c) Other priorities (i.e. statewide testing)
- d) Lack of staff development opportunities

#### Open-Ended Questions

31. What are the barriers for you to use technology in your teaching?

32. What are your attitudes regarding technology usage in your teaching?

33. In your opinion, what would help you to use technology in teaching the Arabic language?

## Appendix (F): Arabic Language Teacher Perspective Survey

Survey | Qualtrics Survey Software

2/26/14 9:27 PM

What is your gender?

- ☐ Male
- ☐ Female

How many years have you been an Arabic language teacher?

- ☐ Less than 1 year
- ☐ 1-2 years
- ☐ 3-5 years
- ☐ 6-10 years
- ☐ 11-15 years
- ☐ More than 15 years

Please select your appropriate age range.

- ☐ 20-30
- ☐ 31-40
- ☐ 41-50
- ☐ 51-60
- ☐ Over 61

What is your highest level of education?

- ☐ Bachelor's degree
- ☐ Bachelor's plus some graduate
- ☐ Master's degree
- ☐ Master's plus some graduate
- ☐ Doctorate



**Teacher Orientation Survey****What are your attitudes to the following statements?**

(please select a number from 1-5, 1 indicating you strongly disagree and 5 indicating you strongly agree)  
1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree.

---

Computers scare me

---

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I like having computers in classrooms

---

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I enjoy using computers

---

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I dislike using computers in teaching

---

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Computers save time and effort

---

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I don't think computers are necessary in the classroom

---

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I would like to learn more about computers

---

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I have no intention of using computers in the near future

---

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Student Usage Survey

How often do students do the following activities during the class period? (Please select a number 1-5, 1 indicating never and 5 indicating Always)

1= Never, 2= Rarely, 3= Sometimes, 4= Very Often, and 5= Always.

---

Work individually on school work without using computers

---

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Perform research or find information without using a computer

---

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Use a computer to play educational games

---

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Learn keyboarding skills

---

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Use a computer to play educational games or for fun

---

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Present information in class using a computer

---

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Use a spreadsheet to analyze data

---

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Use e-mail to communicate with peers or others

---

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Do a project or a paper using a computer outside of class time

---

How often do you perform the following? (please select a number 1-5, 1 indicating never and 5 indicating several times a week)

1= Never, 2= Rarely, 3= Sometimes, 4= Very Often, and 5= Always

---

Type reports and term papers

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Create multimedia projects

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Use pictures or art work

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Access stories or books

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Use graphs or charts

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Watch videos or movies

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Access web pages, websites or other web-based publications

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>

## Teacher Usage Survey

How often do you perform the following? (please select a number 1-5, 1 indicating never and 5 indicating several times a week)

1= Never, 2= Rarely, 3= Sometimes, 4= Very Often, and 5= Always.

---

Use a computer while you are instructing your class

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Prepare or maintain IEP's using a computer

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Create a test, quiz or assignment using a computer

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Use e-mail to communication with the school and district administration

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Create and maintain web pages

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Record student grades using a computer

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Make handouts for students using a computer

Never	Rarely	Sometimes	Most of the Time	Always
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

>>



Computer Competence (Please indicate your level of competence regarding each statement below.)

1=Poor, 2=Fair, 3=Good, 4=Very Good, 5=Excellent

Use a printer

Poor  
☐

Fair  
☐

Good  
☐

Very Good  
☐

Excellent  
☐

Use the internet to communicate

Poor  
☐

Fair  
☐

Good  
☐

Very Good  
☐

Excellent  
☐

Use a computer to upkeep your grades

Poor  
☐

Fair  
☐

Good  
☐

Very Good  
☐

Excellent  
☐

Use a Power Point to present information to your class

Poor  
☐

Fair  
☐

Good  
☐

Very Good  
☐

Excellent  
☐

Create and organize educational material

Poor  
☐

Fair  
☐

Good  
☐

Very Good  
☐

Excellent  
☐

Operate a processing program (Microsoft Word)

Poor  
☐

Fair  
☐

Good  
☐

Very Good  
☐

Excellent  
☐

Operate a spreadsheet program

Poor  
☐

Fair  
☐

Good  
☐

Very Good  
☐

Excellent  
☐

Use the internet to access a variety of information

Poor  
☐

Fair  
☐

Good  
☐

Very Good  
☐

Excellent  
☐

Use a computer keyboard

Poor

Fair

Good

Very Good

Excellent

**Technology Attitudes**

Below you will find various statements. There is no correct answer. Select the answer that corresponds to the following scale:

1= strongly disagree, 2= disagree, 3= neutral, 4= agree, and 5= strongly agree.

---

I like using technology

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Knowing how to use technology is a necessary skill for me

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Technology makes me feel stupid

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

I don't expect to use technology much at work

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

Working with technology is boring

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

I think using technology will be difficult for me

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

It is important to know how to use technology to get a good teaching position

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

I wish I could use technology more often

strongly disagree	Disagree	Neutral	Agree	Strongly Agree
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

---

I feel confident in my ability to learn about technology

We thank you for your time spent taking this survey.  
Your response has been recorded.

This survey was powered by Qualtrics  
Would you like to use Qualtrics to **conduct your own survey?**  
**Sign Up Free**

## Appendix (G): Full Version of the LoTi Survey

---

### Nationally-Collected LoTi Demographic Data

Data from 22 demographic questions can be collected as part of the LoTi Questionnaire to obtain local, regional, and national trends regarding technology implementation practices in schools. Provided below is a listing of those standard 22 demographic questions.

**Subject Specialty:** Which category best describes your primary subject/specialty?

- Humanities (e.g., Language Arts, Fine Arts, Theatrical Arts, Social Studies)
- Sciences (e.g., Physical Science, Chemistry, Health Science)
- Mathematics (e.g., Geometry, Algebra, Statistics)
- Other (e.g., Physical Education, Industrial Technology, Administration, Elementary, Other Electives)

**Grade Level:** Which category best describes your primary grade level?

- Elementary Grades (PreK-Grade 2, PreK-Grade 5, PreK-Grade 6, PreK-Grade 8, Grade 3-5)
- Intermediate Grades (Grade 6-8, Grade 6-9, Grade 7-8)
- Secondary Grades (Grade 9-12, Grade 10-12)
- All Grade Levels (PreK-Grade 12)

**Years Teaching:** How many years of experience do you have in education?

- Less than Five Years
- Five to Nine Years
- Ten to Twenty Years
- More than Twenty Years

**Age:** What is your age group?

- Twenty-one to Thirty
- Thirty-one to Forty
- Forty-one to Fifty
- Over Fifty

**Gender:** What is your gender?

- Female
- Male

**Technology Relevance:** Do you feel like technology is relevant to your instructional setting?

- Yes
- No

**Highest Level Of Education:** What is your highest level of education?

- Bachelor's Degree
- Master's Degree
- Educational Specialist Degree
- Doctoral Degree

**Number Of Classroom Computers:** How many computers do you have for instructional use in your classroom?

- None
- One to Two
- Three to Five
- More than Five

**Guidance For Performance Based Practices:** From which individual(s) do you mostly seek primary guidance, information, inspiration, and/or direction relating to the integration of performance-based practices in your instructional setting?

- ☐ Students
- ☐ Classroom Teachers (e.g., Other Colleagues, Mentors, Peer Coaches)
- ☐ School/District Specialists (e.g., Media/Technology Specialist, Instructional Specialist)
- ☐ Other (e.g., Building Administrator, College Professor, Vendor)

**Greatest Obstacle:** What do you perceive as your greatest obstacle to further using technology in your instructional setting?

- ☐ Access to Technology
- ☐ Time to Learn, Practice, and Plan
- ☐ Other Priorities (e.g., Statewide Testing, New Textbook Adoptions)
- ☐ Lack of Staff Development Opportunities

**Technology Sharing Sessions:** Do you participate in formal or informal technology sharing sessions, such as faculty meetings, inservice training, lunchtime discussions, before or after school meetings, or common preparation time within your instructional setting?

- ☐ Yes
- ☐ No

**Number Of Technology Conferences:** How many national, regional, or local technology conferences have you attended over the past five years?

- ☐ None
- ☐ One to Two
- ☐ Three to Five
- ☐ More than Five

**Specific Technology Trainings:** Have you successfully completed a specific technology training program over the past five years (e.g., In-Tech Training, Georgia Learning Connection Training, ELITE Training, WebTech Training, INTEL Training, WebQuest Training)?

- ☐ Yes
- ☐ No

**Grant Participation:** Are you taking this questionnaire as part of a state or federal grant requirement (e.g., No Child Left Behind (NCLB), PT3, STaR-W, ACE+)?

- ☐ Yes
- ☐ No

**Classroom Internet Connection:** Do you have an internet connection in your classroom?

- ☐ Yes
- ☐ No

**Educator Computer Frequency:** Approximately how often do you use computers to do your job as an educator?

- ☐ Daily
- ☐ A Few Times a Week
- ☐ A Few Times a Month
- ☐ A Few Times a Year

**Student Computer Frequency:** Approximately how often do students use computers in your instructional setting?

- ☐ Daily
- ☐ A Few Times a Week
- ☐ A Few Times a Month
- ☐ A Few Times a Year

**Home Computer Use:** Do you have a personal computer at home?

- ☐ Yes
- ☐ No

**Home Internet Connection:** Do you have an internet connection at home?

- ☐ Yes
- ☐ No

**Hours Of Technology Training:** How many hours of technology-related training have you received over the past five years?

- ☐ Less than Ten Hours
- ☐ Eleven to Twenty Hours
- ☐ Twenty-one to Thirty Hours
- ☐ More than Thirty Hours

**Content Of Technology Training:** Which statement best describes the content of your technology-related training?

- ☐ No Training
- ☐ Mostly technology skills training (e.g., training on software applications, the internet, troubleshoot hardware)
- ☐ Mostly curriculum integration training (e.g., how technology can be effectively integrated in the classroom,
- ☐ A combination of technology skills and curriculum integration training

**Guidance For Technology Integration:** From which individual(s) do you mostly seek primary guidance, information, inspiration, and/or direction relating to the integration of technology in your instructional setting?

- ☐ Students
- ☐ Classroom Teachers (e.g., Other Colleagues, Mentors, Peer Coaches)
- ☐ School/District Specialists (e.g., Media/Technology Specialist, Instructional Specialist)
- ☐ Other (e.g., Building Administrator, College Professor, Vendor)

---

## LoTi Questionnaire

The following information has been requested as part of an ongoing effort to increase the Level of Technology Implementation in schools nationwide. Individual information will remain anonymous, while the aggregate information will provide various comparisons for your school, school district, regional service agency, and/or state within the LoTi Technology Use Profile. Please fill out as much of the information as possible.

The LoTi Questionnaire (LoTiQ) takes about 20-25 minutes to complete. The purpose of this questionnaire is to determine your Level of Technology Implementation (LoTi) based on your current position (i.e., pre-service teacher, inservice teacher, building administrator, instructional specialist, media specialist, higher education faculty) as well as your perceptions regarding your Personal Computer Use (PCU), and Current Instructional Practices (CIP).

### ***THIS IS NOT A TEST!***

Completing the questionnaire will enable your educational institution to make better choices regarding staff development and future technology purchases. The questionnaire statements were developed from typical responses of educators who ranged from non-user to sophisticated users of computers. Questionnaire statements will represent different uses of computers that you currently experience or support, in varying degrees of intensity, and should be recorded appropriately on the scale. Please respond to the statements in terms of your present uses or support of computers in the classroom. For statements that are Not Applicable to you, please select a "0" response on the scale.

*\* Indicates that this information is required to correctly process your data.*

Name of State\*: \_\_\_\_\_

Name of Intermediate Unit \*: \_\_\_\_\_

Name of School District\*: \_\_\_\_\_

Name of School\*: \_\_\_\_\_

Position: \_\_\_\_\_

Teacher ID#\* (last 4 digits of SSN):

**A. Do students and teachers have computer access at school?\***

☐ Yes

☐ No

*Computer access means that students and teachers can use computers within the school building for instructional purposes: including computers in the classroom, computer labs, computers on carts, general access computers in the library, or something similar.*

# LoTi Questionnaire

Read each response and assign a score based on the following scale:

0                      1                      2                      3                      4                      5                      6                      7  
N/A                      Not true of me now                      Somewhat true of me now                      Very true of me now

## 1 Score \_\_\_\_\_

I actively encourage my staff to assign projects that involve students analyzing information, thinking creatively, making predictions, and/or drawing conclusions using electronic resources such as multi-purpose calculators, hand-held computers, the classroom computer(s), or computer peripherals (e.g., digital video cameras, probes, MIDI devices).

## 2 Score \_\_\_\_\_

I encourage my staff to use their classroom computer(s) primarily to present information to students using presentation software (e.g., PowerPoint) or interactive white boards because it can help students better understand the content they are taught.

## 3 Score \_\_\_\_\_

I encourage my staff to seek out previously-developed curriculum materials (e.g., instructional kits, existing web-based projects) that (1) emphasize complex thinking skill strategies (e.g., problem-solving, investigation, decision-making), (2) promote the use of computers, and (3) provide opportunities for students to direct their own learning.

## 4 Score \_\_\_\_\_

As part of our ongoing teacher appraisal process, I constantly encourage staff to find ways to use computers to support their curriculum.

## 5 Score \_\_\_\_\_

My top priority for this school year is having our staff attend workshops, enroll in courses, and/or participate in district initiatives that focus on differentiated instruction, performance-based assessment, backwards curriculum mapping and/or thinking skill strategies (e.g., creative problem-solving, decision-making, investigation, scientific inquiry) using the available classroom computers.

## 6 Score \_\_\_\_\_

Students should be involved in setting both group and individual academic goals that provide opportunities for them to direct their own learning within the classroom curriculum.

## 7 Score \_\_\_\_\_

I allocate time to co-teach either a mini-unit or lesson with staff members so as to demonstrate the most effective ways of using technology in a student-centered learning environment given our vast technology infrastructure (e.g., small student/computer ratio, high-speed internet access, updated computer software, teleconferencing capability).

## 8 Score \_\_\_\_\_

I am able to model for my staff how to implement project-based learning in their classrooms that emphasizes higher order thinking skills (e.g., analysis, synthesis, evaluation) using the available computers.

## 9 Score \_\_\_\_\_

My overall goal is for my staff to feel comfortable with using computers to manage their classroom (e.g., using electronic gradebooks, answering their email, creating web pages, browsing the Internet).

## 10 Score \_\_\_\_\_

I assist staff directly or indirectly with implementing collaborative projects whereby students use multiple software/hardware applications (e.g., internet browsers, productivity tools, multimedia applications, digital video cameras, MIDI devices) as well as resources beyond the school building (e.g., partnerships with business professionals, other schools) to solve problems of interest to them.

## 11 Score \_\_\_\_\_

I elicit either district technology trainers or our own in-house teachers for software training so that our staff can use appropriate software programs with their students.

## 12 Score \_\_\_\_\_

Technical problems prevent our staff and students from using computers during the instructional day.

## 13 Score \_\_\_\_\_

I use electronic technology routinely to browse the internet, send/receive email, use different productivity tools (e.g., word processor, spreadsheet, database), and/or access my PDA to communicate and collaborate with staff, parents, students, colleagues, and the larger community.

## 14 Score \_\_\_\_\_

My personal professional development involves investigating the newest developments in instructional computing that take full advantage of our school's extensive technology infrastructure (e.g., immediate access to the newest software applications, multimedia and video production stations, teleconferencing equipment).

## 15 Score \_\_\_\_\_

I am proficient with and knowledgeable about using basic software applications (e.g., word processors, spreadsheets, databases, multimedia presentations) and web-based tools.



## LoTi Questionnaire

Read each response and assign a score based on the following scale:

0 1 2 3 4 5 6 7  
N/A Not true of me now Somewhat true of me now Very true of me now

16 Score \_\_\_\_\_

I constantly encourage my staff to locate good software programs, websites, and/or CD's to supplement their curriculum and reinforce specific content.

17 Score \_\_\_\_\_

When evaluating classroom practices, I let each teacher decide how they want to use computers in their instructional setting.

18 Score \_\_\_\_\_

I routinely model different types of technology uses (e.g., accessing the internet, making presentations, graphing data) for my staff at faculty meetings, grade level/department meetings, and individual conferences to demonstrate their instructional potential for the classroom.

19 Score \_\_\_\_\_

The current student-to-computer ratio at our school is not sufficient for my staff to make use of computers for instructional purposes.

20 Score \_\_\_\_\_

I favor the use of alternative assessment methods (e.g., performance-based assessment, peer reviews, self-reflection) that encourage students to "showcase" their content understanding in nontraditional ways.

21 Score \_\_\_\_\_

I, along with my staff, spend time reviewing (1) the newest software and web-based innovations and (2) most current research on teaching and learning so as to continually assess the quality of instructional experiences used with our existing technology infrastructure.

22 Score \_\_\_\_\_

I have been successful in articulating a vision for technology use with my staff that promotes an atmosphere of trust, collegiality, collaboration, and experimentation.

23 Score \_\_\_\_\_

Given the curriculum demands on campus, it is much easier and more practical for students to learn about and use computers and related technologies outside of the classroom (e.g., computer labs).

24 Score \_\_\_\_\_

My vision for effective technology use would be purchasing a computer-based curriculum management system for our staff that would generate specific lesson plans appropriate to each grade level or content area and be aligned to district and state standards.

25 Score \_\_\_\_\_

When assessing teachers' performance during formal observations, I do not evaluate the manner in which technology is used in the classroom.

26 Score \_\_\_\_\_

I am aware of the instructional capability and benefits of most multimedia authoring tools (e.g., HyperStudio, PowerPoint), productivity tools (e.g., Excel, Access), internet resources, and peripherals (e.g., digital video cameras, probes, interactive white boards).

27 Score \_\_\_\_\_

A top priority of mine is seeking assistance from mentor teachers, "qualified" consultants, and related professionals who could assist my staff in their current efforts to implement and manage student-directed learning experiences (e.g., students defining tasks, setting goals, and generating questions) that take advantage of our school's existing technology infrastructure.

28 Score \_\_\_\_\_

As a building administrator, I am convinced that my staff has stretched the limit of instructional computing at our school given the extensive and complete technology infrastructure available on campus (e.g., small student/computer ratio; high-speed internet access; updated hardware and software; web, multimedia, and video production stations).

29 Score \_\_\_\_\_

I continually communicate to my staff the importance of their students becoming effective problem-solvers and self-directed learners through the use of our school's extensive technology infrastructure (e.g., immediate and unlimited access to the internet, updated computer software, latest multimedia and video production stations).

30 Score \_\_\_\_\_

The time that I devote to instructional technology issues involves acquiring the necessary resources (e.g., funding, mentors, consultants, time) for my staff to learn how to design and manage student-centered projects directed at (1) state content standards and (2) the use of the available computers in the classrooms.

31 Score \_\_\_\_\_

I continually seek release time for my staff so that they can work together on classroom management issues associated with using the classroom computer(s) to implement authentic and challenging performance-based assessments for their students.

32 Score \_\_\_\_\_

Students' questions and previous experiences should heavily influence what content is taught in the classroom as well as how learning activities are designed for students.



# LoTi Questionnaire

Read each response and assign a score based on the following scale:

0                      1                      2                      3                      4                      5                      6                      7  
N/A                      Not true of me now                      Somewhat true of me now                      Very true of me now

## 33 Score \_\_\_\_\_

I continually encourage my staff to take into consideration their students' background, prior experiences, and desire to solve authentic and relevant problems when planning a variety of instructional activities that use the available computer(s).

## 34 Score \_\_\_\_\_

I am competent to model for my staff student-centered instructional activities that take advantage of our existing computers to engage students in their own learning (e.g., students generate questions, define tasks, set goals, self-assess learning).

## 35 Score \_\_\_\_\_

Our school's professional development for technology is intertwined with a variety of teacher collaborative activities that target technology resources used in conjunction with the most current research on teaching and learning.

## 36 Score \_\_\_\_\_

I continually communicate to my staff the importance of students applying what they have learned in the classroom to a real world situation (e.g., student-generated recycling program, student-generated business, student generated play/musical) when using the classroom computer(s).

## 37 Score \_\_\_\_\_

My staff currently needs more training on using technology with relevant and challenging learning experiences rather than how to use specific software applications to support current lesson plans.

## 38 Score \_\_\_\_\_

At our school, I want students to learn how to create their own web page or multimedia stack that either documents or reinforces what they have been learning in class.

## 39 Score \_\_\_\_\_

I am continually filtering through conference agendas, research briefs, and online resources for professional development ideas that address my staff's need for bigger, more engaging experiences for their students that take advantage of both their "technology" expertise and the available computers in their classrooms.

## 40 Score \_\_\_\_\_

When conducting classroom observations, I deliberately look for evidence of higher levels of student cognitive processing (e.g., analysis, synthesis, evaluation) using the available classroom computers.

## 41 Score \_\_\_\_\_

Students' use of information and inquiry skills to solve problems of personal relevance to them should guide the types of instructional materials used in and out of the classroom.

## 42 Score \_\_\_\_\_

The curriculum demands in our building such as implementing standards and increasing student test scores have diverted attention away from teachers and students using our available computers and related technologies.

## 43 Score \_\_\_\_\_

I have the background experience to evaluate any classroom lesson or student project to determine how appropriate the computers are being used based on the content standards being addressed and the level of cognitive processing being targeted.

## 44 Score \_\_\_\_\_

I am willing to forego the acquisition of more computers on campus if I could direct the funding for more professional development that targets how to implement and manage relevant and engaging learning experiences for our students using the existing classroom computers.

## 45 Score \_\_\_\_\_

My immediate staff priority is for our teachers to learn how students can use the available classroom computer(s) to achieve specific outcomes aligned to district or state standards.

## 46 Score \_\_\_\_\_

As a building administrator, I am able to identify software applications, peripherals, and web-based resources as well as professional development workshops that support and expand student's critical and creative thinking and authentic problem-solving skills.

## 47 Score \_\_\_\_\_

I encourage my staff to empower students to discover innovative ways to use our school's extensive technology infrastructure to make a difference in their lives, in their school, or in their community.

## 48 Score \_\_\_\_\_

Our district does not provide adequate training for my staff to use the computers in their classrooms.

## 49 Score \_\_\_\_\_

I frequently explore new types of software applications, web-based tools, and peripherals as they become available to determine their instructional potential for students.

## 50 Score \_\_\_\_\_

Having students consistently apply what they have learned in the classroom to the world they live in is a cornerstone to my educational philosophy about instruction and assessment.

**1. Default Section****Levels of Technology Implementation (LoTi) Questionnaire**

The following information has been requested as part a research study at Texas A&M University about the relationship between the use of technology to teach writing and student success on the TAKS ELA exit-level test. Individual information will remain anonymous. Please fill out as much of the information as possible.

The LoTi Questionnaire (LoTiQ) takes about 10-15 minutes to complete. The purpose of this questionnaire is to determine your Level of Technology Implementation (LoTi), as well as your perceptions regarding your Personal Computer Use (PCU), and Current Instructional Practices (CIP).

Completing the questionnaire will enable the researcher to compare responses from teachers to the students scores on the TAKS English Language Arts exit-level test. The questionnaire statements were developed from typical responses of educators who ranged from non-user to sophisticated users of computers. Questionnaire statements will represent different uses of computers that you currently experience or support, in varying degrees of intensity, and should be recorded appropriately on the scale. Please respond to the statements in terms of your present uses or support of computers in the classroom.

Responses should be made on a scale of 0 to 7, ranging from "not true of me now" for scores 1 and 2, to "somewhat true of me now" for scores 3 to 5, and "very true of me now" for scores 6 and 7. Choose the number that best meets your description within that range. For statements that are Not Applicable to you, please select a "0" response on the scale.

**1. The following information will be kept confidential by the researcher but is necessary for the researcher to correctly process your data.**

School District Name

School Name

**2. Your age range:**

- ☐ 21-25  
☐ 26-30  
☐ 31-35  
☐ 36-40  
☐ 41-45  
☐ 46-50  
☐ 50+

**3. Your number of years of teaching experience:**

- ☐ 0-5  
☐ 6-10  
☐ 11-15  
☐ 16-20  
☐ 21-25  
☐ over 25

**4. Your highest degree completed:**

- ☐ bachelor's degree  
☐ some graduate school coursework  
☐ master's degree  
☐ classes toward doctoral degree  
☐ doctoral degree

**\*5. Do you have computer access at school? Computer access means that students and teachers can use computers within the school building for instructional purposes; this includes computers in your classroom, computer labs, computers on carts, general access computers in the library or something similar.**

- ☐ yes  
☐ no

**6. Read the response and assign a score on the number scale of 0 to 7:**

**I frequently engage students in learning activities that require them to analyze information, think creatively, make predictions, and/or draw conclusions using classroom technology resources.**

- ☐ 0 not applicable  
☐ 1 not true of me now  
☐ 2 not true of me now  
☐ 3 somewhat true of me now  
☐ 4 somewhat true of me now  
☐ 5 somewhat true of me now  
☐ 6 very true of me now  
☐ 7 very true of me now

7. Read the response and assign a score on the number scale of 0 to 7:

I frequently present information to students using multimedia presentations or electronic "slideshows" to reinforce the content standards that I am teaching and better prepare students to take standardized tests.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

8. Read the response and assign a score on the number scale of 0 to 7:

I have trouble managing a student-centered classroom using the available technology resources and would welcome the help of a peer coach or mentor.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

9. Read the response and assign a score on the number scale of 0 to 7:

Students in my classroom design either web-based or multimedia presentations to showcase their research (e.g., information gathering) on topics that I assign in class.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

10. Read the response and assign a score on the number scale of 0 to 7:

I frequently assign web-based projects to my students as a means of emphasizing specific complex thinking skill strategies aligned to the content standards.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

11. Read the response and assign a score on the number scale of 0 to 7:

My students collaborate with me in setting both group and individual academic goals that provide opportunities for them to direct their own learning aligned to the content standards.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

12. Read the response and assign a score on the number scale of 0 to 7:

Using the most current and complete technology available, I have maximized the use of the learning technologies in my classroom and at my school.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

13. Read the response and assign a score on the number scale of 0 to 7:

Problem-based learning is common in my classroom because it allows students to use the classroom technology resources as a tool for higher-order thinking and personal inquiry.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

14. Read the response and assign a score on the number scale of 0 to 7:

I use the classroom technology resources exclusively to take attendance, record grades, present content to students, and/or communicate with parents via email.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

15. Read the response and assign a score on the number scale of 0 to 7:

My students identify important school/community issues or problems, then use multiple technology resources as well as human resources beyond the school building (e.g., partnerships with business professionals, community groups) to solve them.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

16. Read the response and assign a score on the number scale of 0 to 7:

My students use the classroom technology resources most frequently to improve their basic math and literacy skills via practice testing software, integrated learning systems (ILS), or tutorial programs.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

17. Read the response and assign a score on the number scale of 0 to 7:

Constant technical problems prevent me and/or my students from using the classroom technology resources during the instructional day.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

18. Read the response and assign a score on the number scale of 0 to 7:

I am proficient with basic software applications such as word processing tools, internet browsers, spreadsheet programs, and multimedia presentations.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

19. Read the response and assign a score on the number scale of 0 to 7:

My students frequently discover innovative ways to use our schools' advanced learning technologies to make a real difference in their lives, in their school, and in their community.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

20. Read the response and assign a score on the number scale of 0 to 7:

I can solve most technical problems with our classroom's technology resources during the instructional day without calling for technical assistance.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

21. Read the response and assign a score on the number scale of 0 to 7:

Locating quality software programs, websites, or CDs to supplement my curriculum and reinforce specific content standards is a priority of mine at this time.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

22. Read the response and assign a score on the number scale of 0 to 7:

Though I may use technology for teacher preparation, I am not comfortable using my classroom technology resources as part of my instructional day.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

23. Read the response and assign a score on the number scale of 0 to 7:

I am comfortable training others in using basic software applications, browsing/searching the Internet, and using specialized technologies unique to my grade level or content area.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

24. Read the response and assign a score on the number scale of 0 to 7:

Computers and related technology resources in my classroom are not used during the instructional day, nor are there any plans to include them at this time.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

25. Read the response and assign a score on the number scale of 0 to 7:

I consistently provide alternative assessment opportunities that encourage students to "showcase" their understanding of the content standards in nontraditional ways.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

26. Read the response and assign a score on the number scale of 0 to 7:

My students use the Internet for (1) collaboration with others, (2) publishing, (3) communication, and (4) research to solve issues and problems of personal interest that address specific content standards.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

27. Read the response and assign a score on the number scale of 0 to 7:

My students participate in online collaborative projects (not including email exchanges with other students, government agencies, or business professionals) to solve their self-selected problems or issues.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

28. Read the response and assign a score on the number scale of 0 to 7:

Given my current curriculum demands and class size, it is much easier and more practical for my students to learn about and use computers and related technology resources outside my classroom (e.g. computer lab, resource center).

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

29. Read the response and assign a score on the number scale of 0 to 7:

I use the classroom technology resources most frequently to locate lesson plans I can use in class that are appropriate to my grade level and are aligned with our content standards.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

30. Read the response and assign a score on the number scale of 0 to 7:

My current instructional program is effective without the use of technology; therefore, I have no current plans to change it to include any technology resources.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

31. Read the response and assign a score on the number scale of 0 to 7:

I use technology resources daily to access the Internet, send email, and/or plan classroom activities.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

32. Read the response and assign a score on the number scale of 0 to 7:

Due to time constraints and/or lack of experience, I prefer using instructional units recommended by my colleagues that emphasize complex thinking skills, students technology use, content standards, and student relevancy to the real world.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

33. Read the response and assign a score on the number scale of 0 to 7:

My students' creative thinking and authentic problem-solving opportunities are supported by the most advanced and complete technology infrastructure available.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

34. Read the response and assign a score on the number scale of 0 to 7:

My personal professional development involves investigating and implementing the newest innovations in instructional design and learning technologies that take full advantage of my school's current and complete technology infrastructure.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

35. Read the response and assign a score on the number scale of 0 to 7:

I can locate and implement instructional units that emphasize students using the classroom technology resources to solve "real-world" problems or issues, but I don't usually create them myself.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

36. Read the response and assign a score on the number scale of 0 to 7:

I have an immediate need for some outside help with designing student-centered performance assessments using the available technology that involves students applying what they have learned to make a difference in their school/community.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

37. Read the response and assign a score on the number scale of 0 to 7:

Students' use of information and inquiry skills to solve problems of personal relevance guides the types of instructional materials used in and out of my classroom.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

38. Read the response and assign a score on the number scale of 0 to 7:

My instructional use of our classroom technology resources is frequently altered according to the latest innovations and research in the areas of instructional technology, teaching strategies, and/or learning theory.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

39. Read the response and assign a score on the number scale of 0 to 7:

I regularly implement a student-centered approach to teaching that takes advantage of our classroom technology resources to engage students in their own learning.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

40. Read the response and assign a score on the number scale of 0 to 7:

I frequently consider (1) my students' interests, experiences, and desire to solve relevant problems and (2) the available human resources outside of the school when planning student -centered learning activities that include technology.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

41. Read the response and assign a score on the number scale of 0 to 7:

Students taking meaningful action at school or in the community relating to the content standards learned in the class is an essential part of my approach to using classroom technology resources.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

42. Read the response and assign a score on the number scale of 0 to 7:

I have an immediate need for professional development opportunities that place greater emphasis on using my classroom technology resources with challenging and differentiated learning experiences rather than using specific software applications to support my current lesson plans.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now



43. Read the response and assign a score on the number scale of 0 to 7:

My students create their own web pages or multimedia presentations to showcase what they have learned in class rather than preparing traditional reports.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

44. Read the response and assign a score on the number scale of 0 to 7:

The types of professional development offered through our school system does not satisfy my need for more engaging and relevant experiences for my students that take full advantage of both my "technology" expertise and personal interest in developing learner-based curriculum units.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

45. Read the response and assign a score on the number scale of 0 to 7:

My students frequently use the classroom technology resources for research purposes that require them to investigate an issue/problem, think creatively, take a position, make decisions, and/or seek out a solution.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

46. Read the response and assign a score on the number scale of 0 to 7:

Having students apply what they have learned in my classroom to the world they live in is a cornerstone to my approach to instruction and assessment.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

47. Read the response and assign a score on the number scale of 0 to 7:

Curriculum demands, scheduling, and/or budget constraints at our school have prevented me from using any of the available technology resources during the instructional day.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

48. Read the response and assign a score on the number scale of 0 to 7:

I am skilled in merging the classroom technology resources with relevant and challenging, student-directed learning experiences that address the content standards.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

49. Read the response and assign a score on the number scale of 0 to 7:

Though I currently use a student-centered approach when creating instructional units, it is still difficult for me to design these units on my own to take full advantage of our classroom technology resources.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

50. Read the response and assign a score on the number scale of 0 to 7:

My immediate professional development need is to learn how my students can use our classroom technology resources to achieve specific outcomes aligned to the content standards.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

51. Read the response and assign a score on the number scale of 0 to 7:

It is easy for me to identify and implement software applications, peripherals, and web-based resources that support students' complex thinking skills and promote self-directed problem solving.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

52. Read the response and assign a score on the number scale of 0 to 7:

My students have immediate access to all forms of the most advanced and complete technology infrastructure available that they use to pursue problem-solving opportunities surrounding issues of personal and/or social importance.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

53. Read the response and assign a score on the number scale of 0 to 7:

I need access to more resources and/or training to begin using the available technology resources as part of my instructional day.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

54. Read the response and assign a score on the number scale of 0 to 7:

I regularly use different technology resources for personal or professional communication and planning.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

55. Read the response and assign a score on the number scale of 0 to 7:


Students' questions and previous experiences heavily influence the content that I teach as well as how I design learning activities for my students.

- ☐ 0 not applicable
- ☐ 1 not true of me now
- ☐ 2 not true of me now
- ☐ 3 somewhat true of me now
- ☐ 4 somewhat true of me now
- ☐ 5 somewhat true of me now
- ☐ 6 very true of me now
- ☐ 7 very true of me now

56. OPTIONAL: If you have any comments you would like to share, please type them here.

# Appendix (H): Full Version of the Use, Support and Effect of Instructional Technology Survey

## TEACHER SURVEY



Study of Educational Technology  
332 Campion Hall  
Boston College  
Chestnut Hill, MA 02467

### Directions


Your school has been selected to participate in a statewide study of educational technology. This survey asks questions about your use of computers both in and outside of school.

In this survey we use the term "technology" to refer to computers or computer-related devices (such as LCD projectors, Palm Pilots, etc.).

- Use only a No. 2 pencil
- Do not use ink, ballpoint, or felt tip pens
- Make solid marks that fill the response completely
- Erase cleanly any marks you wish to change
- Make no stray marks on this form

CORRECT: ●

INCORRECT: ○ × ⊗ ⊕ ⊖



1. What are the first four letters of your last name?

Ⓐ Ⓐ Ⓐ Ⓐ	Ⓑ Ⓑ Ⓑ Ⓑ	Ⓒ Ⓒ Ⓒ Ⓒ	Ⓓ Ⓓ Ⓓ Ⓓ
Ⓔ Ⓔ Ⓔ Ⓔ	Ⓕ Ⓕ Ⓕ Ⓕ	Ⓖ Ⓖ Ⓖ Ⓖ	Ⓗ Ⓗ Ⓗ Ⓗ
Ⓘ Ⓘ Ⓘ Ⓘ	Ⓢ Ⓢ Ⓢ Ⓢ	Ⓙ Ⓙ Ⓙ Ⓙ	Ⓚ Ⓚ Ⓚ Ⓚ
Ⓛ Ⓛ Ⓛ Ⓛ	Ⓜ Ⓜ Ⓜ Ⓜ	Ⓝ Ⓝ Ⓝ Ⓝ	Ⓟ Ⓟ Ⓟ Ⓟ
Ⓡ Ⓡ Ⓡ Ⓡ	Ⓣ Ⓣ Ⓣ Ⓣ	Ⓡ Ⓡ Ⓡ Ⓡ	Ⓢ Ⓢ Ⓢ Ⓢ
Ⓤ Ⓤ Ⓤ Ⓤ	Ⓡ Ⓡ Ⓡ Ⓡ	Ⓥ Ⓥ Ⓥ Ⓥ	Ⓦ Ⓦ Ⓦ Ⓦ
Ⓧ Ⓧ Ⓧ Ⓧ	Ⓨ Ⓨ Ⓨ Ⓨ	Ⓩ Ⓩ Ⓩ Ⓩ	Ⓛ Ⓛ Ⓛ Ⓛ
Ⓜ Ⓜ Ⓜ Ⓜ	Ⓝ Ⓝ Ⓝ Ⓝ	Ⓟ Ⓟ Ⓟ Ⓟ	Ⓡ Ⓡ Ⓡ Ⓡ
Ⓢ Ⓢ Ⓢ Ⓢ	Ⓣ Ⓣ Ⓣ Ⓣ	Ⓡ Ⓡ Ⓡ Ⓡ	Ⓢ Ⓢ Ⓢ Ⓢ
Ⓤ Ⓤ Ⓤ Ⓤ	Ⓡ Ⓡ Ⓡ Ⓡ	Ⓥ Ⓥ Ⓥ Ⓥ	Ⓦ Ⓦ Ⓦ Ⓦ
Ⓧ Ⓧ Ⓧ Ⓧ	Ⓨ Ⓨ Ⓨ Ⓨ	Ⓩ Ⓩ Ⓩ Ⓩ	Ⓛ Ⓛ Ⓛ Ⓛ

2. How many years have you taught at your current school?

<input type="radio"/> Less than 1 year	<input type="radio"/> 6-10 years
<input type="radio"/> 1-2 years	<input type="radio"/> 11-15 years
<input type="radio"/> 3-5 years	<input type="radio"/> More than 15 years

3. How many years have you taught throughout your career?

<input type="radio"/> Less than 1 year	<input type="radio"/> 6-10 years
<input type="radio"/> 1-2 years	<input type="radio"/> 11-15 years
<input type="radio"/> 3-5 years	<input type="radio"/> More than 15 years

4. What is your gender?

☐ Female

☐ Male

5. Please mark the appropriate range for your age.

<input type="radio"/> 20-30	<input type="radio"/> 41-50	<input type="radio"/> 51+
<input type="radio"/> 31-40	<input type="radio"/> 51-60	

6. How do your school's results on the state-mandated test compare to those of other schools in your state?

☐ Above Average

☐ Average

☐ Below Average

7. With my class(es), I am currently using technology during instruction as much as I would like.

☐ Strongly Disagree

☐ Disagree

☐ Neither Agree nor Disagree

☐ Agree

☐ Strongly Agree

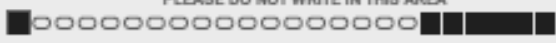
8. What subjects do you currently teach? Please mark ALL that apply.

<input type="checkbox"/> I am a Department Head	<input type="checkbox"/> Social Studies/Geography/History	<input type="checkbox"/> Foreign Languages
<input type="checkbox"/> All (Elementary Education)	<input type="checkbox"/> Special Education	<input type="checkbox"/> Technology Education
<input type="checkbox"/> English/Language Arts	<input type="checkbox"/> Science	<input type="checkbox"/> Music/Arts
<input type="checkbox"/> Math	<input type="checkbox"/> Librarian	<input type="checkbox"/> Other

9. What grade level(s) do you currently teach? Please mark ALL that apply.

<input type="checkbox"/> Kindergarten	<input type="checkbox"/> 3	<input type="checkbox"/> 6	<input type="checkbox"/> 9	<input type="checkbox"/> 12
<input type="checkbox"/> 1	<input type="checkbox"/> 4	<input type="checkbox"/> 7	<input type="checkbox"/> 10	
<input type="checkbox"/> 2	<input type="checkbox"/> 5	<input type="checkbox"/> 8	<input type="checkbox"/> 11	

PLEASE DO NOT WRITE IN THIS AREA



SERIAL

10. How often do you use each of the following devices in your classroom?	Never	Less than once per week	Once per week	3 times a week	Daily
LCD projector/Computer Projection System	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TV monitor/VCR	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Scanner	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Digital Camera	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overhead Projector	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

11. <u>During class time</u> , how often did students perform the following activities this year?	Never	Once or twice a year	Several times a year	Several times a month	Several times a week
Students work individually on school work <u>without using</u> computers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students work individually on school work <u>using</u> computers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students work in groups on school work <u>without using</u> computers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students work in groups on school work <u>using</u> computers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students perform research or find information <u>without using</u> a computer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students perform research or find info. <u>using</u> the Internet or CD ROM.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use a computer or portable writing device for writing.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use a computer to solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students learn keyboarding skills.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use a computer to play educational games.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use a computer to play games for fun.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students present information to the class <u>without using</u> a computer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students present information to the class <u>using</u> a computer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use a spreadsheet/database to record, explore or analyze data.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use probes (e.g., thermometers, etc.) attached to a computer.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use email to consult with "experts."	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students use computers to communicate with students in other schools.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students do a project or paper using a computer <u>outside of class time</u> .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. How often did <u>you</u> perform the following?					
Use a computer to deliver instruction to your class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Record student grades using a computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Prepare or maintain IEPs using a computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Adapt an activity to students' individual needs using computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Make handouts for students using a computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create a test, quiz or assignment using a computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Perform research and lesson planning using the Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email to teachers in my school	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email communication with school and district administration	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Email to student's parents	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create web-quests or build the Internet into a lesson	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Create and maintain web pages	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. How often do you ask students to produce the following using technology?					
Reports and term papers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multimedia projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Web pages, web sites or other web-based publications	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pictures or artwork	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stories or books	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Graphs or charts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Videos or movies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Never	Once or twice a year	Several times a year	Several times a month	Several times a week

DC Mark Reflector forms by MCS Pearson 09-303873-1-5a0225 E006 Printed in U.S.A.

14. For how many years have you had:

- A computer in your classroom?
- An Internet connection in your classroom?
- A computer at home?
- An Internet connection in your home?

	Never	1 year	2-3 years	3-4 years	5-6 years	7+ years
A computer in your classroom?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Internet connection in your classroom?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A computer at home?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Internet connection in your home?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How many years ago did you first use computers in the following ways?

- Require students to complete assignments using a computer
- For your own work; grading, handouts, transparencies
- For other activities; personal email, word processing, web-surfing
- For instructional purposes in your classroom

	Never	1 year	2-3 years	3-4 years	5-6 years	7+ years
Require students to complete assignments using a computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For your own work; grading, handouts, transparencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For other activities; personal email, word processing, web-surfing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For instructional purposes in your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Indicate how many of the following devices you have access to and how often you use these devices:

- Desktop computers in your classroom
- Desktop computers in the lab/media center
- Desktop computers in the library
- Printer in your room
- Laptop computers permanently in your classroom
- Shared laptop computers
- Alphasarts in your classroom
- Alphasarts that are shared by other teachers
- PDA's (Palm Pilots)

	How many?						How often used?				
	0	1	2	3-5	6-7	8+	Never	Daily	3 X's a week	Once per week	Less than weekly
Desktop computers in your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desktop computers in the lab/media center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desktop computers in the library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Printer in your room	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laptop computers permanently in your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shared laptop computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alphasarts in your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alphasarts that are shared by other teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PDA's (Palm Pilots)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Which of the following do you have available to you?

- Select all that you have
- ☐ A telephone with an outside line in your classroom
  - ☐ Internet access in your classroom
  - ☐ 4 desktop computers in your classroom
  - ☐ 4 wireless laptops in your classroom
  - ☐ One desktop computer for each student in a lab
  - ☐ One wireless laptop for each student in your classroom
  - ☐ Digital camera for the classroom
  - ☐ One classroom printer
  - ☐ Multiple classroom printers
  - ☐ TV monitor with VCR
  - ☐ LCD projector/computer projection system
  - ☐ A Palm Pilot for each student
  - ☐ A portable writing device (e.g. Alphasmart) for each student
  - ☐ A desktop computer teachers can access in their classroom
  - ☐ A laptop for teacher use
  - ☐ A Palm Pilot for teacher use
  - ☐ Overhead Projector

18. How valuable do you think the following equipment might be for your teaching, whether or not you are currently using it?

	Very valuable	Somewhat valuable	Not Very Valuable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

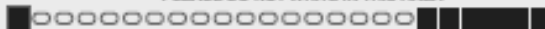
19. Which one of the following technologies would be most valuable to you?

- ☐ 4 desktop computers in your classroom
- ☐ One desktop for each student in a lab
- ☐ A mobile cart with one wireless laptop for each student available for sign-out

20. The email system in my school is:

- ☐ Not readily available
- ☐ Available, but not widely used
- ☐ Available, used widely, but has not replaced older forms of communication
- ☐ Available, widely used and has largely replaced older forms of communication

PLEASE DO NOT WRITE IN THIS AREA



SERIAL

14. For how many years have you had:

- A computer in your classroom?
- An Internet connection in your classroom?
- A computer at home?
- An Internet connection in your home?

	Never	1 year	2-3 years	3-4 years	5-6 years	7+ years
A computer in your classroom?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Internet connection in your classroom?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A computer at home?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
An Internet connection in your home?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

15. How many years ago did you first use computers in the following ways?

- Require students to complete assignments using a computer
- For your own work; grading, handouts, transparencies
- For other activities; personal email, word processing, web-surfing
- For instructional purposes in your classroom

	Never	1 year	2-3 years	3-4 years	5-6 years	7+ years
Require students to complete assignments using a computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For your own work; grading, handouts, transparencies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For other activities; personal email, word processing, web-surfing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For instructional purposes in your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

16. Indicate how many of the following devices you have access to and how often you use these devices:

- Desktop computers in your classroom
- Desktop computers in the lab/media center
- Desktop computers in the library
- Printer in your room
- Laptop computers permanently in your classroom
- Shared laptop computers
- Alphasarts in your classroom
- Alphasarts that are shared by other teachers
- PDA's (Palm Pilots)

	How many?						How often used?				
	0	1	2	3-5	6-7	8+	Never	Daily	3 X's a week	Once per week	Less than weekly
Desktop computers in your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desktop computers in the lab/media center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Desktop computers in the library	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Printer in your room	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Laptop computers permanently in your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shared laptop computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alphasarts in your classroom	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Alphasarts that are shared by other teachers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
PDA's (Palm Pilots)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

17. Which of the following do you have available to you?

Select all that you have

- ☐ A telephone with an outside line in your classroom
- ☐ Internet access in your classroom
- ☐ 4 desktop computers in your classroom
- ☐ 4 wireless laptops in your classroom
- ☐ One desktop computer for each student in a lab
- ☐ One wireless laptop for each student in your classroom
- ☐ Digital camera for the classroom
- ☐ One classroom printer
- ☐ Multiple classroom printers
- ☐ TV monitor with VCR
- ☐ LCD projector/computer projection system
- ☐ A Palm Pilot for each student
- ☐ A portable writing device (e.g. Alphasmart) for each student
- ☐ A desktop computer teachers can access in their classroom
- ☐ A laptop for teacher use
- ☐ A Palm Pilot for teacher use
- ☐ Overhead Projector

18. How valuable do you think the following equipment might be for your teaching, whether or not you are currently using it?

	Very valuable	Somewhat valuable	Not Very Valuable
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

19. Which one of the following technologies would be most valuable to you?

- ☐ 4 desktop computers in your classroom
- ☐ One desktop for each student in a lab
- ☐ A mobile cart with one wireless laptop for each student available for sign-out

20. The email system in my school is:

- ☐ Not readily available
- ☐ Available, but not widely used
- ☐ Available, used widely, but has not replaced older forms of communication
- ☐ Available, widely used and has largely replaced older forms of communication

PLEASE DO NOT WRITE IN THIS AREA



SERIAL





28. In school A, professional development focuses on the mechanics of how to use a computer or specific software. In school B, professional development focuses on how to use technology during classroom instruction for specific areas of the curriculum. Which type of professional development does your school tend to focus on?

School A

School B

☐

☐

☐

☐

☐

29. What kinds of professional development would be beneficial to you?

Managing my computer desktop (Opening programs, printing, etc.)

Learning to utilize network services efficiently (email, saving to the server)

Learning about research sources on the Internet

Learning how to manipulate data and construct graphs

Integrating technology with student writing

Integrating technology into my classroom activities

Learning specific applications/software (Microsoft Word, Powerpoint, etc.)

Learning to use the Internet to engage in on-line interactions and/or mentoring

Not Needed

Somewhat Beneficial

Very Beneficial

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

30. Technology Specialists have varied backgrounds. Rank the importance of the following backgrounds for the IDEAL Technology Specialist in your school:

Computer Hardware/Software Specialist

Curriculum Specialist

Classroom Teacher

Computer Teacher

1st

2nd

3rd

4th

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

31. Rate how much each of the following conditions provide an obstacle for you in making more effective use of technology.

Lack of computers in the classroom

Difficult to access computers in labs and/or library

Do not have enough computers for all of my students

Professional development prepares me to use software that is not available in my classroom or school

Prof. dev. prepares me to use technology in the classroom but I do not have enough time to "practice"

Insufficient or inadequate software

Insufficient or inadequate support on how to use technology in the classroom

Computers are too unpredictable- they crash or the software does not work right

Outdated computers/software available to me

Increased speed and improved technology negates teachers' previous investments in technology

Students lack keyboarding skills

Too many students in my class

The kinds of computers and software at school are different from the computers I use at home

My students lack the skill to use computers effectively

There is too much course material to cover in a year to make room for technology use

Teachers lack input into technology decisions

I have a hard time connecting with our school's technology specialist

Internet is too slow

Lack of leadership related to technology

No idea how the district wants us to use computers in the classroom

Lack of flexibility in deciding how to use computers in my classroom

Not sure how to make technology relevant to my subject

The computer skills of students in my class vary so widely that it's too difficult to manage computer use

The academic skills of my students vary so widely that I cannot use computers usefully in my classroom

Not An Obstacle

Minor Obstacle

Major Obstacle

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐

☐



39. In many schools, teachers are pressured to teach in specific ways.  
To what extent are the following pressures felt at your school?

	No Pressure	Very Little Pressure	Some Pressure	A lot of Pressure
To have students work in groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have students use computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To cover a large quantity of curriculum content	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To keep a class quiet, even if that means students are less engaged	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have students use the Internet	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To do "performance-based assessments"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To have students do projects	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To use technology in the same way as other teachers in your grade	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To prepare students to take standardized tests	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
To do "higher-order" thinking and "problem solving"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

40. Indicate how much you disagree or agree with each of the following statements about teaching and learning:

	Strongly Agree	Agree	Disagree	Strongly Disagree
Teachers know a lot more than students; they shouldn't let students muddle around when they can just explain the answers directly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
A quiet classroom is generally needed for effective learning	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is better when the teacher - not the students - decides what activities are done	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students will take more initiative to learn when they feel free to move around the room during class	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students should help establish criteria on which they will be assessed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instruction should be built around problems with clear, correct answers, and around ideas that most students can grasp quickly	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How much students learn depends on how much background knowledge they have - that is why teaching facts is so necessary	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Instruction is most effective when teachers collaborate	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students create better-looking products with computers than with other traditional media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students' writing quality is worse when they use word processors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computers encourage students to be lazy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students interact with each other more while working with computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computers help students grasp difficult curricular concepts	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computers have weakened students' research skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Many students use computers to avoid doing more important school work	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students work harder at their assignments when they use computers	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Students are more willing to do second drafts when using a computer	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technology support in my school exists primarily "to keep the computers running"	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Technology support exists primarily to help teachers integrate computers with teaching	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Think about the class in which you:  
use technology the **MOST**

41. How many students are in that class?

☐ 1-15  
☐ 16-20  
☐ 21-25  
☐ 26-30  
☐ 31+

42. What is the average ability level of these students?

☐ Above average  
☐ Average  
☐ Below average

43. Approximately, what % of the students in that class:

	0-10%	11-30%	31-75%	76-100%
Participated in a gifted and talented program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in an ESL program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in Special Ed. Program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have a computer at home (take your best guess)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have a computer at home with Internet access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Think about the class in which you:  
use technology the **LEAST**

41b. How many students are in that class?

☐ 1-15  
☐ 16-20  
☐ 21-25  
☐ 26-30  
☐ 31+

42b. What is the average ability level of these students?

☐ Above average  
☐ Average  
☐ Below average

43b. Approximately, what % of the students in that class:

	0-10%	11-30%	31-75%	76-100%
Participated in a gifted and talented program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in an ESL program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Participated in Special Ed. Program	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have a computer at home (take your best guess)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Have a computer at home with Internet access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>



## Appendix (I): Full Version of the Teacher Attitude Survey

*Attitude toward Technology* items were from the Technology Attitude Scale developed by McFarlane, Hoffman & Green (1997) [10] and measured the degree to which the following statements were true or not true of them: 1) Knowing how to use computer-related technology is a necessary skill for me; 2) I like using computer-related technology; 3) I feel confident with my ability to learn about computer-related technology; 4) Working with computer-related technology makes me nervous; 5) I now use my knowledge of computer-related technology in many ways as a supervisor or Cooperating Teacher; 6) I like using computer-related technology in my work; 7) I wish I could use computer-related technology more frequently; 8) Computer-related technology makes me feel stupid; 9) A job using computer-related technology would be interesting; 10) I don't expect to use computer-related technology much in my work as a supervisor or Cooperating Teacher; 11) I'm not the type to do well with computer-related technology; 12) I feel uncomfortable using most computer-related technology; 13) Working with computer-related technology is boring; 14) Learning about computer-related technology is a worthwhile and necessary subject for me as a supervisor or Cooperating Teacher; 15) It is important for me to know how to use computer-related technology in order to be a supervisor or Cooperating Teacher; 16) I know that if I work hard to learn about computer-related technology, I will do well; 17) I am able to do as well working with computer-related technology as my fellow supervisors or Cooperating Teachers; 18) I think using computer-related technology is difficult for me; 19) Computer-related technology makes me feel uneasy and confused; 18) Once I start using computer-related technology, I find it hard to stop. Items were followed by a seven point response scale where one equaled "not at all true of me" and seven equaled "very much true of me."